

*The Magazine of*  
**STANDARDS**



New York City Plans for Mass Efficient Purchasing  
Through Standards, page 200

*September 1954*

# The Magazine of STANDARDS

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## MARGINAL NOTES

### In This Issue —

Purchasing might be said to be the theme of this issue. One of the principal articles tells the story of how a large public utility company uses standards to bring about greater interchangeability in parts and equipment used throughout the various divisions of the company. Another tells how one of the largest governmental units in this country — New York City — is now planning to improve its purchasing technique by placing a greater emphasis on use of standards.

As this issue goes to press Hurricane Carol, sweeping over the tip of Long Island and across Connecticut, Rhode Island, and Massachusetts, disrupted telephone and power service in those areas. The importance of standards for replacement parts and equipment was emphasized and the casual acceptance of the standardization principle indicated in a small news item published in one of the New York papers immediately after the hurricane. In this case the story referred to the telephone company. It reported that crews of men were being sent from the New York area with tools and parts to help local telephone systems in the path of the hurricane to repair broken lines. With the help of these outside crews, using standard techniques, standard tools, and standard parts, telephone service was restored in a matter of hours; without standards it would have taken days.

The story of the Virginia Electric Company tells how a company in another field is accomplishing the same thing — providing standard stores of material, parts, and tools



Reg. U. S. Pat. Off.

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for use with standard techniques to renew electrical service in any part of the territory served by it.

At the time Hurricane Carol struck, delegates from all over the world were gathering in Philadelphia to celebrate the Fiftieth Anniversary of the International Electrotechnical Commission. President of the Commission, officiating at the Anniversary celebration, was Dr Harold S. Osborne. Hurricane Carol and the record of the Bell Telephone System offer a striking commentary on the work being done by IEC. In particular, it was a commentary on the work of President Osborne himself. Dr Osborne was Chief Engineer of the American Telephone and Telegraph Company for many years, and had a strong personal interest in standardization. He was largely responsible for encouraging and developing the standards that made the present record of the telephone company possible. The work of IEC aims toward the same type of accomplishments internationally — uniform definitions of terms so that specifications and technical articles can be understood in any country; standard measurements for performance of electrical equipment; standard ratings of equipment, and standard dimensions for interchangeability of parts.

#### **The National Standardization Conference —**

This year the Fifth National Conference on Standards is being held at the Hotel Roosevelt, November 15-17. The preliminary program (page 292) promises a number of sessions of unusual interest.

#### **The Front Cover —**

One of the tests of the New York Department of Purchases is to determine the tensile strength of rope. At the left, Mr Nicholas A. De Maio, Chief, Bureau of Standardization, is shown examining a section of rope that has broken under the test. Other laboratory tests include measuring sugar content of food by means of a Polarimeter (top right), and testing coal (portion of testing unit showing electric ovens at bottom right).



## **This Month's Standards Personality**

**Mrs Eileen Cunningham's** energy is amazing to all who know her. Librarian in charge of the Vanderbilt University School of Medicine since 1929 and Professor of Medical Library Practice since 1949, she is one of the outstanding protagonists of standards for library practice. She is a member of ASA's Sectional Committee Z39 on Library Practice and Documentation (sponsor: The Council of National Library Associations), and was chairman of the subcommittee that revised the American Standard Reference Data for Periodicals, Z39.1-1943. Her interest and leadership in this work were given recognition recently when she was chosen to present the story of standards in a panel discussion during the annual meeting of the Special Libraries Association.

Mrs Cunningham was well qualified to talk on the subject assigned. She has been chairman of the Medical Library Association's Committee on Bibliography since 1945 and of its Committee on International Cooperation since 1948. She has been chairman of the Committee on Standardization of Periodicals of the American Library Association's Serial Roundtable; and has also served as chairman of the International Federation of Library Association's Subcommittee on Periodicals and Serial Publications.

Since attending the second International Congress on Libraries and Bibliography at Madrid, Spain, in 1935, she has been a frequent representative of American library groups at international conferences. On a number of occasions she has presented the USA viewpoint at meetings of Technical Committee 46 (Documentation) of the International Organization for Standardization.

Her standing in international circles that affect the usability and availability of the scientific and technical literature of the world is evident in the fact that she served as technical advisor to the U.S. delegation at the International Conference on Science Abstracting convened by UNESCO in 1949; was delegate to the International Conference on Documentation at Rome, 1951; and Rapporteur in 1953 for the Ad Hoc Advisory Committee on Medical Library Education in Europe of the World Health Organization. She also represented the International Federation of Library Associations and the International Federation for Documentation at the First International Congress on Medical Librarianship at London in 1953.

Mrs Cunningham has the distinction of being the third woman to serve as president (1947-48) of the Medical Library Association since its organization in 1898.

Mrs Cunningham has contributed to the development of medical libraries and library education. The medical library of the University of Dalhousie Medical School at Halifax, Nova Scotia, was planned with her help as Consultant. She helped in the reorganization of the medical library of the Facultad de Medicina, Universidad Mayor de San Marcos at Lima, Peru, and assisted in a survey of medical libraries in Colombia and in Mexico for the Division of Medical Sciences of the Rockefeller Foundation.

For outstanding achievement in medical librarianship she received the Marcia C. Noyes Award in 1949 from the Medical Library Association.

Personally, Mrs Cunningham is a natural-born traveler. She likes bridge and dancing, and includes among her important activities homemaking, entertaining, and gardening.



## Stores Standards

**M**EASURED in terms of service rendered, the Virginia Electric and Power Company is one of the dozen or so largest utilities. It serves at retail an estimated population of 2,350,000 people located in an area of about 32,000 square miles, mostly in Virginia but including a part of North Carolina and West Virginia.

To serve adequately the 603,000 customers in this large area, five geographic Divisions have been established, each with the officials and employee organization needed to carry on the Company work in

*Because only standard materials and equipment are purchased and stored in local storerooms, Virginia Electric finds it unnecessary to maintain large inventories for each District. Standard materials and equipment are easily shifted from one location to another as needed. Below, with pallet and fork truck, standard equipment is placed in truck for delivery to work area.*





# Pay Off for Virginia Electric

By F. W. SMITH

the area. The Divisions are divided to make eleven operating Districts equipped to do regular work promptly and efficiently.

The Company headquarters are at Richmond, Virginia. The staff departments on which most of the standardization work falls are system engineering and construction, system operations, purchasing, and stores. Cooperating with the Districts, these four groups study problems, prepare specifications and construction methods, select, purchase, and store materials.

The system engineering and construction department plans, engineers, and constructs the new facilities required by the Company. The work is divided into planning, substation design, transmission design, distribution, and construction supervision. Standardization work is under "distribution" because most of the problems relate to overhead and underground distribution circuits.

System operations is a source of information about the need for standardizing materials or methods and about what is accomplished on the job by standardization.

The responsibilities of the purchasing and stores departments are apparent, but they, too, have an active part in the standards work. Really effective standardization must be helpful in both purchasing and stores work. The procedure used to insure full coverage of standardization ideas by Staff and District groups is explained in the section "How Standard Materials Are Selected."

Through years of experience, a utility develops a kind of construction that best meets its requirements. Each organization pays attention to what the other fellow is doing, but there is frequently a lack of standardization on a broad or a national basis. Some fine progress has been

made by committees of the Edison Electric Institute and the Association of Edison Illuminating Companies working with the National Electrical Manufacturers Association and other manufacturers' groups. The important work of the American Standards Association and the American Society for Testing Materials is most helpful.

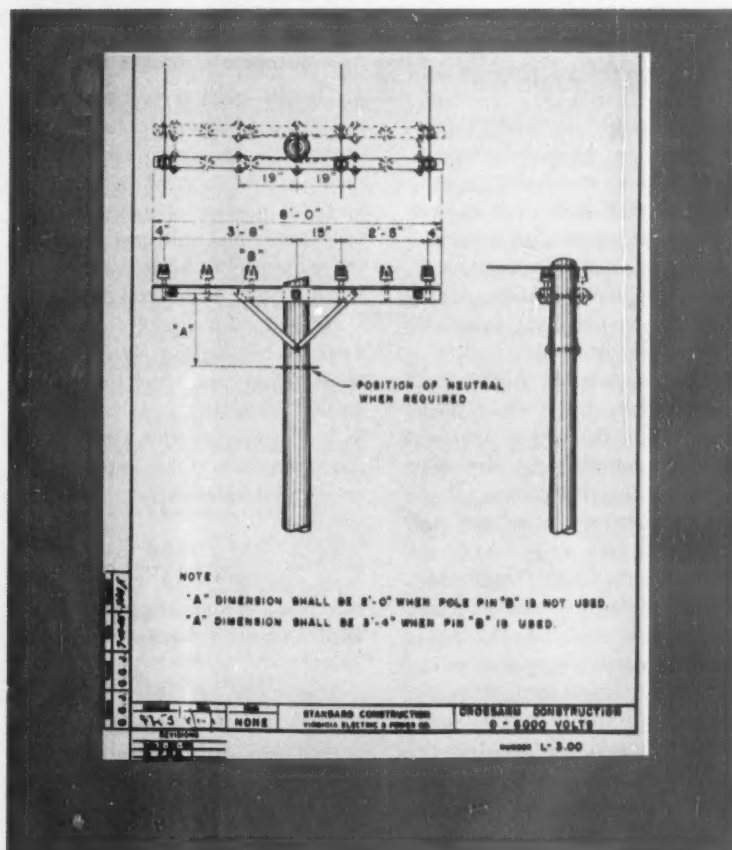
There is a need for utilities to assign some of their problems to groups nationwide in scope. An important example at this time is the dire need for the development and standardization of wire connectors and of tools for their application.

*Mr Smith is Engineering Consultant, Virginia Electric and Power Company, Richmond, Virginia.*

This need arises from the great increase in the use of aluminum for distribution circuits and the difficulty in securely joining dissimilar metals; in this case, copper and aluminum.

The Virginia Electric and Power Company began the standardization of materials and construction about 30 years ago when the primary desire was to try to convince the operating groups in two cities that they

Sample of a "standard" contained in a manual of standard construction used by The Virginia Electric and Power Company



were actually part of one company.

At that time the System Engineering Department was given the job of maintaining a list or catalog of standard materials to be regularly furnished throughout the Company from storeroom stock. These standard materials consist of items used in the construction of overhead and underground distribution lines and substations.

A manual of standard construction was also provided showing recommended ways of building the distribution facilities using the standard materials as fully as practicable.

Having prepared standard construction drawings, the Company then found it logical to establish a standard procedure for estimating the cost of short line extensions, service connections, transformer installations, and all such work of a repetitive nature.

So there are three standards in use — the catalog of standard materials; the manual of standard construction; and the standard estimating procedure.






### Standard Materials

Items of material are selected that best meet the company's requirements, keeping in mind the specifications of each make and its cost.

The approved material must provide adequate and safe construction. In most cases it will be useful throughout the Company to provide uniform construction.

No attempt is made to include all manufacturers in the study of an item. Usually the list of approved suppliers is satisfactorily controlled by the product itself, and two or more suppliers are listed for each item. This is very important to the Stores and Purchasing Departments.

The Company itself makes simple tests of some materials or it may have tests made by a commercial testing laboratory. Some decisions, however, are largely based on experience. Usually the company accepts the Edison Electric Institute standards. As new items are added to the catalog, some old items are removed. These are items that are

POLE AND LINE HARDWARE					5405 (7)
STOCK NO.	APP. MATL.	DESCRIPTION	PURCHASING DATA	OUTLINE	
540589.00	Yes	Rack, 3 wire, 8" spacing, non-extended back, galv. steel * To be specified less spool insulators ** Provisional Approval	L.M. GP-86 Hub. 2438* Joslyn J2138* E.M. 488**		
540590.00	Yes	Rack, 4 wire, 8" spacing, non-extended back, 28" overall length, galv. steel * To be specified less spool insulators ** Provisional Approval	L.M. GP-268 Hub. 2448* Joslyn J2148* E.M. 496**		
540591.00	Yes	Bracket, insulated, 1 wire, 2-1/4" screw length, galv. steel ** Provisional Approval	Hub. 4-11-44 Locke 0611-44* L.M. 334025A1 Oliver 2515 Joslyn J089 Seyler 3-11-44 E.M. 70*		
540592.00	Yes	Bracket, insulated, 1 wire, for 1-1/4" pipe mounting, galv. steel	Hub. 180 L.M. GP-31		
540597.01	No	Clamp, for use with clamp top insulator O.E. #35820, galv. steel, #1/0 to #4/0 cable, complete with bolt and nuts Similar to O.E. 81910	Do not re-stock		

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Figure 1. The "overhead materials catalog" (portion of one of its pages shown above) describes items concisely, contains outline sketches for quick identification.

no longer needed because better material has become available or because of a change in construction methods. An attempt is made to keep the number of items as small as possible and still have available the materials needed to carry on the regular types of construction.

All items are carefully cataloged; there is one catalog for overhead construction and one for underground construction. Substantial loose-leaf binders with 8 1/2 x 11 in. pages are used, as it is impossible to get the information into a pocket-size book.

Each item is listed in the overhead materials book by the Company catalog number (Figure 1). It is described concisely, but accurately.

Sometimes an item is shown in this list that is not standard at the time the sheet is printed. If the item is cataloged as not standard, it is continued in the list because it may be restocked when removed from the lines for further use, or it may

not be satisfactory for restocking or reuse.

Under the heading "Purchasing Data," the approved suppliers are listed with their catalog numbers. In this column may also appear the notation "Do not reorder" or "Do not restock," when the particular item described is no longer to be used. In the right-hand column of the sheet, a simple sketch is made of most items. These sketches are very helpful to those who are not very familiar with the materials they are handling.

### How Standard Materials Are Selected

Because most of the materials are used throughout the Company, and in order to secure the benefits of the experience and knowledge of a large group of men interested in engineering, building, and operating distribution facilities, a System Engineering Committee was formed to which all items proposed for the standards catalog are referred for

approval or rejection. This committee consists of our 11 District Superintendents plus representatives from System Engineering, System Operating, Safety, and Construction Departments. The chairman and secretary of the committee are from the System Engineering Department. The vice-chairman is from a District.

Usually, most of the District Engineers attend the meetings with their superintendents and the attendance is 25 or more.

The decisions of the System Engineering Committee are subject to review by the Chief Engineer and the Vice-President in Charge of Engineering and Construction.

Three subcommittees have been very helpful in carrying on the details of standards work. The Subcommittee for Overhead Construction consists of three members—one from System Construction Department and two District Superintendents. The Subcommittee for Underground Construction consists of the System Underground Distribution Engineer and representatives from three Districts most interested in underground construction. The Subcommittee on Estimating consists of four District Superintendents.

These three subcommittees work closely with the System Distribution Engineer and his assistants so that all questions are broadly considered before being presented to the System Engineering Committee.

The subcommittees present written reports which are mailed to the Engineering Committee members sometime previous to the meeting when the report will be acted upon. The more informative the reports are, the more interest and better judgment is shown by the committee.

Sometimes we send out written ballots on which Yes or No answers are required as well as comment. This is a way to secure a quick vote on a question which need not be discussed in a meeting.

The subcommittees must be real working committees, and if they do a good job, their recommendation

usually will be accepted and the committee work expedited.

It may appear that we go to considerable trouble in taking these steps to establish standard materials. Our experience shows it is worthwhile to follow a procedure which causes all members of the System Engineering Committee to feel that they each have a real part in carrying on this work.

The standards are not established by a group of System men. Actually, more District men vote on standards matters than do System men.

We may move rather slowly in carrying on this work, but we try to do it well and we often avoid ill-considered moves that might prove to be embarrassing to suppliers or to the Company.

In these committee meetings there is a fine opportunity for discussion and exchange of experiences and ideas on distribution problems in general.

Quite often, officers of the Company attend the meetings to discuss matters of special importance.

### *Construction Manual*

The Construction Manuals are prepared in just about the same manner as the Materials Catalog, except that a greater part of the burden falls on the System engineers because of the design and drafting involved.

We have one manual for Overhead Construction and one for Underground Construction and they are widely used in the field and in the office. The pages are 8½ x 11 in. and are contained in sturdy binders.

-----  
The fact that we in America have a high degree of standardization has made life simpler for us in ways so basic and so obvious that we do not realize they exist. Every American, whether he knows it or not, benefits from modern industrial standards — because standards underlie all mass production methods, and because they facilitate the integrating processes necessary to large scale procurement, production, and distribution. Standardization has given us the free national market which we take so casually.—H. E. Cross, U. S. Pipe and Foundry Co.  
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The most important contents are the construction drawings which cover most of our distribution line construction for voltages up to 34 kv. We call these drawings "standards" because they show the use of standard materials and provide for construction which is to be used unless there is a good reason to do otherwise.

There is much other information in the Manuals covering such subjects as: Location of lines; grades of construction; span lengths; sag and tension tables; guying; transformer installations; and code requirements.

We use the Manuals as textbooks for beginners in engineering and construction. Nearly 600 of the books have been issued to estimators, engineers, line and underground foremen, and others interested in some phase of distribution operation and construction.

### *General*

We find that it is good judgment to prepare our Standards books carefully and to arrange the contents for easy reading by both engineers and foremen. We keep in mind at all times that these standards should be used on the job as well as in the office.

Drawings are carefully made, and mechanical lettering or typing is used. Reproductions are made by the offset process.

Of course, the standard materials and the standard methods of construction are not always adhered to in our work. The Company does not expect they will be, but it does expect that the best methods which our men can devise will be followed and that when better methods are found they will be included in the standards.

The key to really successful standardization, we believe, is to make it helpful to all departments whose work is affected by its daily use.

System Engineering, Stores, and Purchasing Departments of our Company have worked together on standards for so long they understand each others' requirements very



Insulator-Pin	6	Kv — Top Groove	540407.00	0.18	Each
"	15	Kv — " "	08.00	0.54	"
"	15	Kv — " "	04.00	1.69	"
"	23	Kv — " "	04.01	2.00	"
"	34.5	Kv — " "	02.00	3.02	"
"	34.5	Kv — " "	04.02	3.57	"
"	46	Kv — " "	04.03	10.40	"
Insulator-Spool	Small		540424.00	0.10	"
"	Large		24.02	0.44	"

#### ASSEMBLY NUMBER AND COST

Assembly No.	Description	Cost		
		Alumi-num	Cop-per	Labor
L-3.00-(a)	Single Arm Single Circuit 0-6 Kv	7.50	6.00	3.00
L-3.00-(b)	Single Arm Single Circuit 0-6 Kv — C.N.	8.68	6.68	3.00
L-3.00-(c)	Single Arm Double Circuit 0-6 Kv	11.08	8.08	3.00
L-3.00-(d)	Single Arm Double Circuit 0-6 Kv — C.N.	12.26	8.76	3.00
L-3.00-(e)	Double Arm Single Circuit 0-6 Kv	14.12	12.62	6.00
L-3.00-(f)	Double Arm Single Circuit 0-6 Kv — C.N.	15.30	13.30	6.00
L-3.00-(g)	Double Arm Double Circuit 0-6 Kv	19.82	16.82	6.00
L-3.00-(h)	Double Arm Double Circuit 0-6 Kv — C.N.	21.00	17.50	6.00

well and each respects these requirements.

For example, it is not always possible for Purchasing to buy a standard item and secure a satisfactory delivery. In this case, Purchasing tells Engineering by phone what it can buy, and Engineering says "Yes" or "No" by phone. The transaction is confirmed by Engineering and copies of the confirmation are sent to Stores and others who may be affected.

The officers of the Company have afforded the engineers practically complete freedom in carrying on the standards work. It was required in the first place and it has been encouraged ever since.

While preparing this paper, I asked our Purchasing Agent if our standards helped his Department. He said, "I don't know what we would do without them!"

#### Standard Estimating

We have used our construction drawings in preparing a series of data sheets and forms for routine

estimating. In this way we save time and can use non-technical men and women to a large extent.

From time to time, as needed, we issue Standard Materials Cost Sheets (Figure 2). From the construction drawings, we count the

material required, then we make a sheet showing the total material cost and labor cost for each drawing (Figure 3). The material required for a job finally is listed and totaled on a preprinted form which is the Stock Slip, as well as the estimator's material list. One copy of this sheet goes to the Stores Department and from there to Plant Accounting.

There are more steps in the making of the estimate, but this indicates that our estimating has become related to standards work.

#### Material Procurement and Control

Electric transmission and distribution materials required for maintenance and construction purposes are handled by both the Purchasing and Stores Departments strictly in accordance with the Standard Materials Catalog.

The details of purchasing are considerably simplified by the information contained in the Catalog, inasmuch as under each stock number the approved vendors and the Manufacturer's Catalog numbers are listed. Therefore, the necessity of referring to various catalogs for purchasing information is eliminated. In fact, the Purchasing Agent has no manufacturers' catalog file for such materials in his office. In

#### L-3.00—Tangent Crossarm Construction, 0-6 kv

		a	b	c	d	e	f	g	h
263002.14	Bolt, $\frac{3}{8}$ " x 4 $\frac{1}{2}$ "	2	2	2	2	4	4	4	4
263004.28	Bolt, $\frac{3}{8}$ " x 10"		1		1		1		1
263004.36	Bolt, $\frac{3}{8}$ " x 14"	1	1	1	1				
263004.44	Bolt, $\frac{3}{8}$ " x 18"					1	1	1	1
263011.44	Bolt, Spacer, $\frac{5}{8}$ " x 18"					2	2	2	2
263031.12	Lag Screw, $\frac{1}{2}$ " x 4"	1	1	1	1	2	2	2	2
263064.02	Washer, Rd, 7/16"	2	2	2	2	4	4	4	4
263065.00	Washer, Offset, 2 $\frac{1}{4}$ "	3	3	6	6	6	6	12	12
263065.01	Washer, Lock, $\frac{3}{8}$ "	2	2	2	2	4	4	4	4
263065.04	Washer, Lock, $\frac{5}{8}$ "	1	2	1	2	9	10	9	10
263066.04	Washer, Sq, 2 $\frac{1}{4}$ "	2	3	2	3	10	11	10	11
540204.00	Crossarm, Wood, 8'	1	1	1	1	2	2	2	2
540235.00	Brace, Steel, 28"	2	2	2	2	4	4	4	4
540300.01	Pin, Drive, 9"	3	3	6	6	6	6	12	12
540601.00	Clevis, Bracket		1		1		1		1
540407.00	Insulator, Pin, 6 kv	3	3	6	6	6	6	12	12
540424.00	Insulator, Spool		1		1		1		1
5429	Armor Rod (Specify Size)	3	4	6	7	3	4	6	7

STOCK SLIP				VIRGINIA ELECTRIC AND POWER COMPANY											
FORM E-66-1 (1-58)															
DATE PREPARED _____				CREDIT GENL. SLIP _____											
TO BE USED AT _____				EST NO _____				CHG IMP REQ _____				ACCT _____			
DESCRIBE FULLY THE USE OF THIS MAT'L _____															
SR NO _____															
QUAN ISSUED	QUAN REQ	STOCK NUMBER	DESCRIPTION	ASSEMBLY NUMBER				QUAN ISSUED	QUAN REQ	STOCK NUMBER	DESCRIPTION	ASSEMBLY NUMBER			
POLES, TOWERS & FIXT MAT'L															
		200200.CO	Sheet, Elect 1b							540314.00	P'n, Angle 34KV				
		2807 .CO	Nails, D							540564.00	Nut, Eye 5/8"				
		2807 .CO	Nails,							540567.00	Plate, DA 24"				
		283002.14	Bolt, M 3/8x4 1/2							540589.00	Rack, 3 Wire				
		283003.10	" " 1/2 x 6							540590.00	" 4 "				
		283004.24	" " 5/8x8							540601.00	Clevis, Brkt S				
		283004.18	" " 5/8x10							540601.01	" " L				
		283004.12	" " 5/8x12							540607.00	Brkt, Nail				
POLES, TOWERS & FIXT MAT'L (CONT)															

An aid to the making of a job estimate is the Stock Slip (portion shown above) which lists and totals materials needed.

addition, it is of tremendous help to the buyers because Sales representatives are referred to the Standards Committee and instructed as to the method to be used to obtain approval of their product.

Materials required to replenish storeroom stock, or for construction projects, are requisitioned by Stores personnel by means of an 8½ x 11 in. repeating requisition card. These requisition cards show stock number, description as listed in the catalog, and other pertinent information. They flow from the District storerooms through the System Stores Office for approval, and then to the Purchasing Department where the materials specified are purchased.

Standard materials issued from Stores are disbursed on preprinted issue forms, containing the stock number and brief description. The stock ledgers, which are maintained in a Stores Accounting Department for the entire system are likewise identified by stock number and standard description. Thus, it will be seen that the principal stores forms are identified by the same means.

So far as receipt and distribution of materials are concerned, the standard stock number is the key to the whole operation. All materials received are carefully checked to determine that they are in accordance with our standards.

Materials on hand are marked

with the stock number whether they are stored in small quantities or in original shipping containers. The personnel is trained to transact all business pertaining to Stores, Purchasing, and Accounting for standard materials by stock numbers instead of description, since some items can be described in as many different ways as there happen to be persons to describe them.

There are 32 local operating areas with storeroom facilities in each area. While there may not be the same materials in each area, due to differences in operating conditions, each storeroom carries only standard materials of the types required. This fact makes distribution over the System, and control of quantities on hand, a matter of record and one that can be followed with reasonable accuracy. Having only standard materials to handle in the Stores Department also makes it possible to absorb used materials, or those removed from service, into our daily operations promptly and with no objections on the part of the operating personnel.

The volume of inventory on hand is also affected by the Standard Materials Catalog. Since all maintenance and construction work of the same type is done with standard materials, it is not necessary to maintain large inventories for each District. Materials are being constantly shifted from one location to another as working conditions re-

quire. Also, obsolescence is held to a minimum, due to the fact that all purchases and returns to Stores must be the equivalent of standard items. There do arise occasions when some standard material proves unsatisfactory. In such cases, use of the item is discontinued and proper disposition is made of the supply on hand.

Stores Accounting ledgers are maintained for quantities on hand at each operating location and the fact that this record bears the same standard identification as the physical materials in the warehouses adds considerably to the efficiency of both Stores and Accounting work. It also simplifies the handling and adjusting of annual inventories.

Up to this point we have discussed only standard materials. However, at times it is necessary to purchase nonstandard, or special materials. This occurs usually for major construction projects. Such items are requisitioned on a form different from the Repeating Stock Requisition, and are charged to the job for which they are required. When the job is completed, the materials left over are collected at a central location. The materials which have to be kept for maintenance are added to the Standards Catalog, assigned stock numbers, and charged to Stores. Other items may be charged to projects under way, or disposed of in whatever manner is appropriate.

# Committee Asks Comment on Proposed Standard for Spindle Ends for Portable Power Tools

by E. L. CONNELL

THE scope of this committee's problem is defined by its interpretation of a rather broad statement of objectives. Portable power tools are assumed to be hand tools incorporating a power unit using compressed air or electricity and a spindle or other means for applying this power to the working tool or element. Related parts other than the spindle ends, which are now covered by other recognized standards and safety codes, are considered outside the scope of this project, but coordination with such related standardization is very necessary for practical success.

Portable drilling machines are equipped with a chuck for holding straight shank drill bits. Technical Committee 28 is concerned with the means of attaching the chuck to the spindle. Similarly, a screw driving bit is held by a chuck but with very different requirements. Experience over the years has indicated a trend. This trend was recognized by the Engineering Committee of the Electric Tool Institute, and the standards they adopted some years ago are recommended here. The problem in abrasive tools involves consideration of American Standard Safety Code B7.1-1947<sup>1</sup> and of the grinding wheel standards.<sup>2</sup> Much remains to be done in percussion tools. We will outline below some of the projects before this committee.

Spindles for geared chucks should be tapered or threaded according to the standards now established by

the chuck and portable tool manufacturers. The figures presented in Table I have been adopted by the electric tool manufacturers and accepted almost as completely by the manufacturers of pneumatic tools. TC28 recommends these spindles for the American Standard.

The screw driver or nut runner, except impact type, is equipped with a chuck built into the spindle with an hexagonal drive and a ball retainer. The chuck dimensions given in Table II are quite universal and

are offered by TC28 for the American Standard.

Impact wrenches have spindles with a square drive end designed to accept standard power sockets of various sizes. Standardization has been complicated by the variations in socket retainer means and by manufacturing tolerances. Experience has shown that power drive demands closer fits and improvements in retainer means. The Servive Tools Institute has developed a proposal on socket standards. Their

TABLE I—Spindles for Geared Chucks

<p> <math>\frac{1}{16} \pm \frac{1}{64}</math>  <math>\frac{9}{16} +0.000 -0.030</math>  <math>\frac{3}{8}</math> AND <math>\frac{1}{2}</math> DIAM.              * ALSO <math>\frac{7}{16}</math> ON <math>\frac{3}{8}</math> DIAM         </p> <p> <math>\frac{3}{32} \pm \frac{1}{64}</math>  <math>\frac{11}{16} +0.000 -0.030</math>  <math>\frac{5}{8}</math> AND <math>\frac{3}{4}</math> DIAM         </p> <p>             D              L         </p>							
Chuck	Threaded Spindle		Tapered Spindle				
	Diam Thread	Pitch Diam	No.	D	L	Taper Per Ft	
		Max	Min				
$\frac{3}{16}$ and $\frac{1}{4}$ Light	$\frac{3}{8}$ -24	0.3479	0.3455	1	0.3365 0.3370	0.656	0.92508
$\frac{1}{4}$ and $\frac{5}{16}$ Medium	$\frac{3}{8}$ -24 $\frac{1}{2}$ -20	0.4675	0.4649	2 Short	0.4910 0.4905	0.750	0.97861
$\frac{3}{8}$ Light	$\frac{3}{8}$ -24 $\frac{1}{2}$ -20			2	0.4910 0.4905	0.875	0.97861
$\frac{3}{8}$ Medium	$\frac{1}{2}$ -20 $\frac{5}{8}$ -16	0.5844	0.5812	2	0.4910 0.4905	0.875	0.97861
$\frac{1}{2}$ Light	$\frac{1}{2}$ -20 $\frac{5}{8}$ -16			33	0.5635 0.5630	1.000	0.76194
$\frac{1}{2}$ Medium	$\frac{5}{8}$ -16 $\frac{3}{4}$ -16	0.7094	0.7062	6	0.6260 0.6255	1.000	0.62292
$\frac{5}{8}$ and $\frac{3}{4}$ Medium	$\frac{5}{8}$ -16 $\frac{3}{4}$ -16			3	0.7480 0.7475	1.218	0.63898

<sup>1</sup> American Standard Safety Code for the Use, Care, and Protection of Abrasive Wheels.

<sup>2</sup> American Standard Designation and Working Ranges of Surface Grinding Machines of the Reciprocating Table Type, B5.32-1953; Designation and Working Ranges of Plain Cylindrical Grinding Machines, B5.33-1953; and American Standard Grinding, Polishing, and Buffing Equipment Sanitation, Z43-1941.

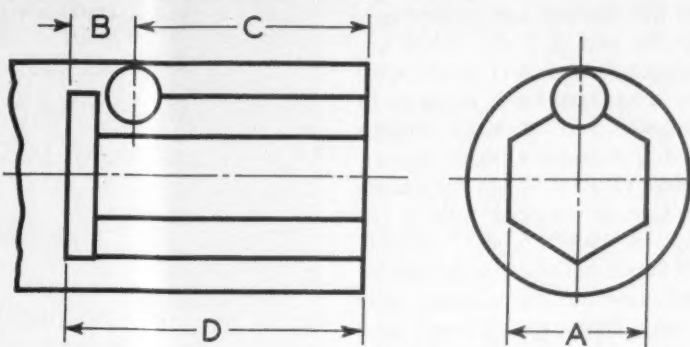


Mr Connell, Chicago Pneumatic Tool Company, is chairman of Technical Committee 28 of the Sectional Committee on Small Tools and Machine Tool Elements, B5. This committee is sponsored by The American Society of Mechanical Engineers; the National Machine Tool Builders Association; the Metal Cutting Tool Institute; and the Society of Automotive Engineers.

committee and TC28 met with the Armed Services in Washington, June 25, 1954 and corrected the standards incorporated in Interim Federal Specification GGG-W-00660. Power tools and sockets in accordance with the revised standards are available to the Armed Services at once, and will be available elsewhere January 1, 1955.

(continued on page 292)

TABLE II—Screw Drivers and Nut Runners



Hexagon Size A			B ±0.005	Max C	Max D
Nominal	Min	Max			
1/4	0.253	0.255	3/8	9/16	13/16
7/16	0.442	0.444	17/64	55/64	1 1/8
5/8	0.630	0.632	11/32	1 1/32	1 3/8
3/4	0.755	0.758	1 1/32	1 17/32	1 7/8

TABLE III—Recommended Drive End Standards—Power Type Wrenches and Sockets

**FEMALE END**

**DESIGN A**

**DESIGN B**

**MALE END**

**DESIGN A**

**DESIGN B**

Drive Size	Design	FEMALE END						Minimum Clearance Across Flats Male to Female	Design	MALE END												Drive Size
		A <sub>F</sub>		B <sub>F</sub>	D <sub>F</sub>		E <sub>F</sub>	R <sub>F</sub>		A <sub>M</sub>		B <sub>M</sub>	C <sub>M</sub>		D <sub>M</sub>		E <sub>M</sub>	F <sub>M</sub>	R <sub>M</sub>			
		Max	Min	Min	Max	Min	Min	Max		Max	Min	Max	Max	Min	Max	Min	Min	Max	Max			
Inch		Inch	Inch	Inch	Inch	Inch	Inch	Inch		Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch		
1/4	A	.258	.253	.335	.159	.147	.090	....	.001	A	.252	.247	.330	.312	.265	.165	.153	....	.078	.015	1/4	
3/8	A	.383	.378	.505	.221	.209	.170	....	.001	A	.377	.372	.500	.438	.406	.227	.215	....	.156	.031	3/8	
1/2	A	.508	.503	.670	.315	.303	.201	....	.001	A	.502	.497	.665	.625	.531	.321	.309	....	.187	.031	1/2	
5/8	A	.633	.628	.839	.315	.303	.201	....	.001	A	.627	.622	.834	.625	.594	.321	.309	....	.187	.047	5/8	
3/4	B	.758	.753	1.005	.409	.397	.216	.047	.001	B	.752	.747	1.000	.938	.750	.415	.403	.216	....	.047	3/4	
1	B	1.009	1.004	1.350	.596	.584	.234	.062	.002	B	1.002	.997	1.340	1.125	1.000	.602	.590	.234	....	.063	1	
1 1/2	B	1.510	1.505	1.983	.647	.635	.310	.125	.002	B	1.503	1.498	1.968	1.625	1.562	.653	.641	.310	....	.094	1 1/2	

Incorporating Fillet Radius (R<sub>M</sub>) at Shoulder of Male Tang Precludes Use of Minimum Diameter Cross-Hole in Socket (E<sub>F</sub>), unless Female Drive End is Chamfered (Shown as Optional).

If Female Drive End is not Chamfered, Socket Cross-Hole Diameter (E<sub>F</sub>) shall be Increased to Compensate for Fillet Radius R<sub>M</sub> (Max).

Prepared by Joint Meeting of Industry and Government Representatives—11-30-53.  
Corrected and Adopted by Joint Meeting of Industry and Government Representatives—6-25-54.

(continued from page 291)

Portable sanding machines of the disc type are very well standardized. All disc pads 5, 7 and 9 inch are designed for a 5/8-11 thread spindle. It has been found necessary to recognize two standard lengths. Sanding discs use a length approximately 15/16 in. When the sanding machine is equipped with a cup wheel of types 5, 6, or 11 (straight and flaring cup wheels with threaded steel inserts or 7/8 in. holes) there is not sufficient spindle length for a safety nut. A length of 1 1/4 inch is recommended to accommodate the safety nut. Standard sanding pads may be used on such spindles with the aid of a spacing washer.

Portable grinding machines using type 1 (straight) wheels should conform to the requirements for safety. The code seems to have been derived mainly from experience with stationary machines and should be reconsidered for application to portable tools. The portable grinder may be used with vitrified wheels or with wheels having organic bond, with buffing wheels, or with wire brushes. In the American Standard Safety Code B7.1-1947 information on such spindle dimensions is limited to wheel speeds for 7000 feet per minute and small flanges are assumed to be cast iron. In present practice we are using many organic wheels at higher speeds and steel flanges somewhat thinner than specified for cast iron. Long spindles are being supplied for buffing and short ones for cone wheels. It would seem that the safety committees should extend their limits to include portable tools and organic wheels; also buffers. The variety here indicates safety is the user's responsibility.

Percussion tools are in need of standardization. This committee's concern would seem to be the bushing in the tool but no progress is possible without simultaneous agreement on the shanks of the working elements. TC28 has before it a report on this subject from the International Organization for Standardization dated Paris, September 1953. British and American practices are

(continued on page 311)

## MONDAY, NOVEMBER 15

10:00 a.m.

Small

Ballroom

### 36th ANNUAL MEETING, AMERICAN STANDARDS ASSOCIATION

*Presiding: Roger E. Gay, President, American Standards Association*

*Keynote Address: Roger E. Gay  
Another Year of ASA—Vice Admiral G. F. Hussey, Jr, USN (Ret), Managing Director, ASA*

*Progress of Technical Work in 1954—J. R. Townsend, Director of Materials and Standards Engineering, Sandia Corporation; Chairman, ASA Standards Council*

*Announcement of Election of Officers and Members of the Board of Directors, ASA, for 1955*

*Modular Coordination Service Awards*

2:00 p.m.

Small

Ballroom

### SAFETY SESSION

*Sponsored by the American Society of Safety Engineers*

*Presiding: Edward R. Granniss, Manager, Loss Prevention and Engineering Department, Royal Liverpool Insurance Group, New York*

*ASSE and Safety Standardization—Henry B. Duffus, Administrator, Accident Prevention, Westinghouse Corporation, Pittsburgh, Pa.*

*Discussion from the floor.*

*American Safety Standards—A Demonstration of Industrial Self-Government—Arthur S. Johnson, Vice-President and Manager Engineering Department, American Mutual Liability Insurance Company, Boston, Mass.*

*Discussion from the floor.*

*Standards in Relation to Industrial Noise Prevention—Professor W. A. Rosenblith, Massachusetts Institute of Technology, Boston, Mass.*

*Discussion from the floor.*

2:00 p.m.

Vanderbilt

Suite

### SESSION ON INTERNATIONAL STANDARDS

*Sponsored by the U. S. National Committee of the International Electrotechnical Commission*

*Presiding: R. C. Sogge, President, USNC*

*A Report on the IEC Golden Jubilee*

## Preliminary Program

# FIFTH NATIONAL CONFERENCE ON STANDARDS

November 15-17, 1954

Hotel Roosevelt, New York

### TUESDAY, NOVEMBER 16

9:30 a.m.  
Small  
Ballroom

#### COMPANY STANDARDIZATION

Session sponsored jointly by the Company Member Conference and the Committee on Standardization of the National Association of Purchasing Agents

*Presiding: W. B. Fleming, Manager, Standards Division, Jeffrey Manufacturing Company, Columbus, Ohio; Chairman, Company Member Conference*

Definition of the Areas of Standardization—Vice Admiral G. F. Hussey, Jr, USN (Ret), *Managing Director, American Standards Association*

Discussion from the floor.

Surface Finish Standards and Their Application in Manufacturing—Roy P. Trowbridge, *G-M Engineering Standards, General Motors Corporation, Detroit, Mich*

Hotel Roosevelt



### TUESDAY, NOVEMBER 16 (continued)

9:30 a.m.  
Vanderbilt  
Suite

#### QUALITY CONTROL SESSION

Sponsored by the Metropolitan Section, American Society for Quality Control

2:00 p.m.  
Small  
Ballroom

#### COMPANY STANDARDIZATION

Sponsored by the CMC and NAPA (Continued)

What the National Association of Purchasing Agents Is Doing in Standardization—E. H. Weaver, *Union Oil Company of California, Los Angeles, California*

What the Purchasing Agent Wants from the Engineer in Standardization—Nelson J. Gibbins, *Motor Wheel Corporation, Lansing, Mich*  
W. R. Murray, *Bigelow-Sanford Carpet Company, Thompsonville, Conn*  
Discussion from the floor.

#### SYMPOSIUM ON STANDARDS FOR AGRICULTURAL CHEMICALS

2:00 p.m.

### WEDNESDAY, NOVEMBER 17

9:30 a.m.  
Grand  
Ballroom

#### COLOR TELEVISION SESSION

Sponsored by the Radio-Electronics-Television-Manufacturers Association

Vanderbilt  
Suite

#### CONFERENCE OF EXECUTIVES OF ORGANIZATION MEMBERS OF ASA

*Presiding: Lester Benoit, Executive Secretary, Manufacturers Standardization Society of the Valve and Fittings Industry, New York*

12:30 p.m.  
Grand  
Ballroom

#### ANNUAL AWARD LUNCHEON

Presentation of The Howard Conoley Medal and The Standards Medal  
*Presiding: Roger E. Gay, President, American Standards Association*



# The Marking of Portable Compressed Gas Containers

by F. R. FETHERSTON

**I**N the opinion of the owners of compressed gas cylinders, the most satisfactory method for indicating the material contained is through the use of legend (the written word) applied to the cylinder in a manner that will assure its legibility. This view is supported by Sectional Committee Z48 working under the procedures of the American Standards Association, which recently approved a revision of American Standard Z48.1, American Standard Method of Marking Portable Compressed Gas Containers to Identify the Material Contained.

When originally adopted in 1942, this standard was entitled "American Standard Method of Marking Compressed Gas Cylinders to Identify Content." The change in title and scope of the standard was desirable since these containers are frequently used for the storage and handling of materials other than compressed gases.

In this revision the standard has been expanded to include a reference to containers intended for use in international trade. At a conference sponsored by the International Organization for Standardization (ISO), a resolution was adopted recommending to the participating organizations that each one adopt a standard for marking compressed gas containers, and that these standards include a common reference to the marking of containers for use

in international trade. In principle, the conference concurred upon the use of legend as a basic method for indicating the material contained and rejected the proposals to use colors for that purpose.

The American Standard as recently revised is in complete harmony with the recommendations of the international conference.

It calls for legibly marking containers with the name of the material contained in the language of the country in which the container is charged, as well as with the international chemical formula or other agreed abbreviation. The list of abbreviations to be used is given in the standard.

Compressed gas containers used in domestic trade, shall be marked at least with the chemical name or a commonly accepted name of the material contained. Marking is to be by means of stenciling, stamping, or labeling, and not readily removable. It is to be located at the valve end and off the cylindrical part of the body.

Since American Standard Z48.1-1954 makes no reference to the use of colors, and since this method of indicating container content is frequently proposed, it seems fitting to comment upon that subject. There are proponents of color coding who feel that it has merit and should not be overlooked. Such proposals have frequently been discussed at meetings of safety groups, societies with some interest in the field of compressed gases, laboratory technologists, anesthetists, and others whose opinions reflect a limited experience when considered in the light of the broader fields of use for all compressed gases. Certain of our governmental agencies have been strong proponents for the use of color coding, but even the largest users of compressed gases among them are consumers of a small percentage of the commodities that are normally charged into compressed gas containers. There are more than 60 compressed gases that are shipped or stored in the types of

containers that we are discussing, and there are only seven primary colors. This means that in order to utilize color for identification purposes, combinations of colors would have to be employed. Also, various shades of the same color would have to be used.

Such use of color would introduce additional possibility of error in the determination of cylinder content, and for several reasons. The people who use compressed gases would have to learn what the various color combinations mean. This involves a matter of education, the effectiveness of which would vary with the abilities of each person. Even if every person had the same degree of visual acuity or color perception, there would be a wide variation in the accuracy with which a color coding system would be translated. And we know at least that people do not all have the same degree of color perception. In fact, many people are totally color-blind.

We know also that painted cylinders used in locations where they were exposed to impure industrial atmospheres have actually changed color due to reaction between the polluted atmosphere and the cylinder paint. While this is admittedly an unusual circumstance, it is eliminated as a source of error when the color of the container is not employed to denote its content. It must also be noted that shades of color vary considerably under different kinds of light such as mercury vapor and fluorescent lights.

The use of color on cylinders certainly has its place, for it is essential to good housekeeping, especially as a company matter. It is believed, however, that color should only be used for secondary purposes, such as segregation, or for ownership identification. It should not be used as a primary method for content identification.

There always has to be an exception to the rule, so there is one instance where color is utilized for selective purposes with the concurrence of the compressed gas industry. Medical gas producers and users have subscribed to the practice of applying a color area to the shoulder

of the small medical gas cylinders which are used exclusively for anesthetic purposes. This practice is described in Simplified Practice Recommendation R176-41, "Color Marking for Anesthetic Gas Cylinders" published by the U.S. Department of Commerce. The recommendation applies only to medical gas cylinders which approximate 4½ in. diameter by 26 in. long, and to a very limited number of gases; 8 gases or mixtures of gases, to be exact.

It might seem that acceptance of this practice by the medical gas industry is a contradiction of the broad principles outlined in American Standard Z48.1-1954. Such is not the case, however. All medical gas cylinders are marked or labeled for identification of the material contained as a requirement of the Federal Food and Drug Act. This fulfills the requirements of American Standard Z48.1-1954 for the use of legend as the most satisfactory means and primary means for identification of cylinder content. The application of color to the shoulder of these medical gas cylinders is therefore secondary.

In companies where a variety of gases are produced, it is customary for each to have a color coding system of its own. But such color

coding is used for segregation purposes, for the facilitating of storage, for container ownership identification, and for plain good housekeeping and maintenance practices. This appears to be the proper place and the logical use for colors on compressed gas containers.

Now, how can the gas user help to overcome the occasional complaint that gas cylinders are not marked satisfactorily to identify their content! A simple and effective way to remind the gas supplier of such negligence is to refuse to accept delivery of cylinders of gases unless they are clearly and legibly marked with the name or trade name of the gas contained. The gas supplier is the fellow to talk to about it, and it will be found that he will willingly cooperate as he has a sincere desire to have his products utilized safely, with sound judgment, care, and understanding.

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The American Standard Method of Marking Portable Compressed Gas Containers to Identify the Material Contained, Z48.1-1954, may be obtained from the American Standards Association at 25 cents per single copy; 15 cents per copy for orders of 2 or more.

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• • **The Commercial Standard on Household Insecticides** (Liquid Spray Type), CS72-38, is being revised, and the proposed revision is now being circulated for comment. Copies of the Recommended Revision, TS-5214, can be obtained from the Commodity Standards Division, Office of Technical Services, U.S. Department of Commerce, Washington 25, D.C. The revision was proposed by the Chemical Specialties Manufacturers Association and has been approved by the Standing Committee of the industry.

• • **The Indonesian Standards Body** is now a member of the International Organization for Standardization. This brings the membership to a total of 34 national standards bodies in good standing. Ir R.O. Kosasih is president of the new ISO member body, which has its headquarters in Bandung, Indonesia.

## GAILLARD SEMINAR

Twenty men representing fourteen organizations attended Dr John Gaillard's private seminar on Industrial Standardization held in New York City, June 21 through 25, 1954. The organizations are:

- \*American Society of Mechanical Engineers
- \*American Standards Association
- \*Barber-Greene Co
- \*Bethlehem Steel Co
- Burroughs Corp
- Celanese Corp of America
- Chain Belt Co
- Koppers Co, Inc
- \*Polymer Corp Ltd (Canada)
- Raytheon Mfg Co
- \*Standards Inst of Israel
- \*Texas Instruments Inc
- \*Trane Co
- \*Victor Adding Machine Co

Nine of these organizations (marked by an asterisk) were represented for the first time.

The Gaillard Seminars, held twice a year since 1947, have so far been attended by 253 representatives from 141 organizations, including American and Canadian companies; trade associations; the ASA and four foreign national standards bodies; the U.S. Departments of the Army, Navy, and Air Force; the National Bureau of Standards; the Massachusetts Institute of Technology; the Universities of California and Illinois; and the Mellon Institute.

The next five-day Gaillard Seminar will be held from January 24 through 28, 1955, in the Engineering Societies Building, New York City. The major subjects to be discussed are the organization and procedure of standardization work in an individual company, and the principles and technique of formulating standard specifications. Advance registrations may be made by writing Dr Gaillard at his home address, 400 West 118 Street, New York 27, N.Y.

Formerly a member of the ASA staff and a lecturer in standardization at Columbia University, Dr Gaillard is now a private management counsel specializing in advice on standardization problems.

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*Mr Fetherston is Secretary-Treasurer, Compressed Gas Association, Inc, and Vice-President, Liquefied Petroleum Gas Association, Inc. He is a member of Sectional Committee Z48, which was responsible for the standard he describes here and of which the Compressed Gas Association is sponsor. Mr Fetherston is active in standardization work, not only in his own organization, but also as a member of a number of sectional committees on screw threads, mechanical refrigeration, and gas burning appliances. He is also chairman of the sectional committee on storage and handling of anhydrous ammonia and ammonia solutions, K61. Mr Fetherston has a voice in ASA policy decisions as a member of the Chemical Industry Advisory Board and of the Conference of Executives of Organization Members of ASA.*

## Dakins Addresses AATCC, Urges Textile Industry to Adopt Standards

**C**ONTROL of the quality of every piece of merchandise offered for sale is one important way for the textile industry to get its share of the growing ability of people to buy, J. Gordon Dakins told the American Association of Textile Chemists and Colorists at its meeting in New York May 19. Mr Dakins is Executive Vice-President and Treasurer of the National Retail Dry Goods Association.

The American Customer of 1954 is "Open to buy," Mr Dakins said, "but buy she will not, until we take every action at our command to stimulate her desire for goods."

Quoting Arno Johnson, research director, J. Walter Thompson Company, he estimated that "discretionary spending power is now 4½ times its total of 1941, amounting to 51 percent of disposable income."

"It would be folly for you or me to think for an instant that Mr and Mrs American Consumer are not prudent buyers," he said. "They have been educated almost from birth to want and get the best in every type of merchandise. The best to them means style, fashion, and design, certainly. But it means, as well, an adherence to standards of performance which satisfy in wearability, too. The value of a dress, a curtain, a blouse,

a shirt, a slipcover, or any other item is no greater than the value its component parts deliver to the customer.

"What can be more discouraging to a shopper than the failure of an article bought with confidence to meet expectations in wear? What can lead faster to consumer distrust and ill will, than disappointment in a purchase made with trust in a store and its merchandise? What faster method is there to lose customers and lose sales volume, than to gain consumer antipathy?"

"Why have we not taken action as a group?" Mr Dakins asked. "Why have we not joined forces to cooperatively develop a pre-testing formula in which every segment of the trade will participate?"

"We had better say to ourselves and even to our competition that what is good for customers is good for our industry, and what is good for industry is good for ourselves," Mr Dakins commented.

"At this very moment, the National Retail Dry Goods Association is sponsoring the promulgation of end-use standards by the American Standards Association.<sup>1</sup> When issued, these ASA Standards will constitute a yardstick of performance values for yarn producers, mills, converters, dyers, manufacturers, and retailers. Our cooperation is needed on an industry-wide basis. To fail to cooperate in this vital effort, or in the resulting ASA Standards is to fail to recognize our responsibilities to the American consumer and the textile industry itself.

"These, of course, are voluntary standards. As such, they offer the chance of voluntary participation by every segment of the craft. If they

are good, and they will be good, then they deserve our voluntary participation. If we pay them only lip service, we cannot later complain, should we suddenly find ourselves forced to adhere to standards established by outside agencies."

Calling on the Textile Industry to form a committee representing all phases of the industry to work with the Technical Committee of the National Retail Dry Goods Association, Mr Dakins said, "Let's eliminate dissatisfaction that can be avoided by applying test methods for evaluation of textiles. Then let each fiber and each fabric fight for preference of the consumer on sound grounds of applied sciences to which the American Association of Textile Chemists and Colorists contributes so greatly."

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### Quart Oil Cans Same Size

Dimensions of quart size motor oil cans has been made uniform in a new American Standard, B64.1-1954. This standard will benefit oil companies, the packaging industry, service stations, and the manufacturers of cans and of the machinery for filling and closing cans.

Standard quart oil cans will run through the filling and closing machines of an oil company, regardless of the make of the machines or the cans. Also, cans made according to the new American Standard will be easily packed in cartons of the same size and may be displayed to better advantage on standard-size racks in service stations. Can manufacturers benefit by this uniformity because they can supply the same can to all oil companies.

The organizations who participated in the work on this American Standard are the American Petroleum Institute, National Lubricating Grease Institute, National Bureau of Standards, Packaging Institute, and the U.S. Department of the Navy—Bureau of Supplies and Accounts.

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The American Standard Specification for One-Quart Round Motor Oil Cans, B64.1-1954, may be obtained from the American Standards Association at 30 cents per copy.

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J. Gordon Dakins



<sup>1</sup> End-use standards for all textiles are being developed by ASA Sectional Committee L25, following the principles used in developing American Standards for Rayon Fabrics. These standards and the principles on which they were based are described in the booklet, "L22, Your Key to Better Textiles," available from the American Standards Association at 10 cents per copy.



# GOVERNMENT STANDARDS

By S. P. Kaidanovsky

## New York City Plans for More Efficient Purchasing Through Standards

THE Department of Purchase of the City of New York (Commissioner, Joseph V. Spagna; Deputy Commissioner, Abram Mattes), consists of five operating bureaus: Purchase, Stores, Accounts and Audits, Administration, Standardization and a Board of Standardization as shown on the Organization Chart.

### Bureau of Purchase

The primary function of the Bureau of Purchase (A. L. McMillan, Director) is to convert purchase requisitions into purchase contracts and orders. In performing this function, the Bureau is using purchase

specifications. Though the using agency must determine the quantity of commodities and the conditions and timing of the delivery, it is not always prepared to determine the quality, grade, kind and other characteristics of the commodities suitable for satisfactory performance. For this purpose a Bureau of Standardization and a Board of Standardization were established in the Department of Purchase.

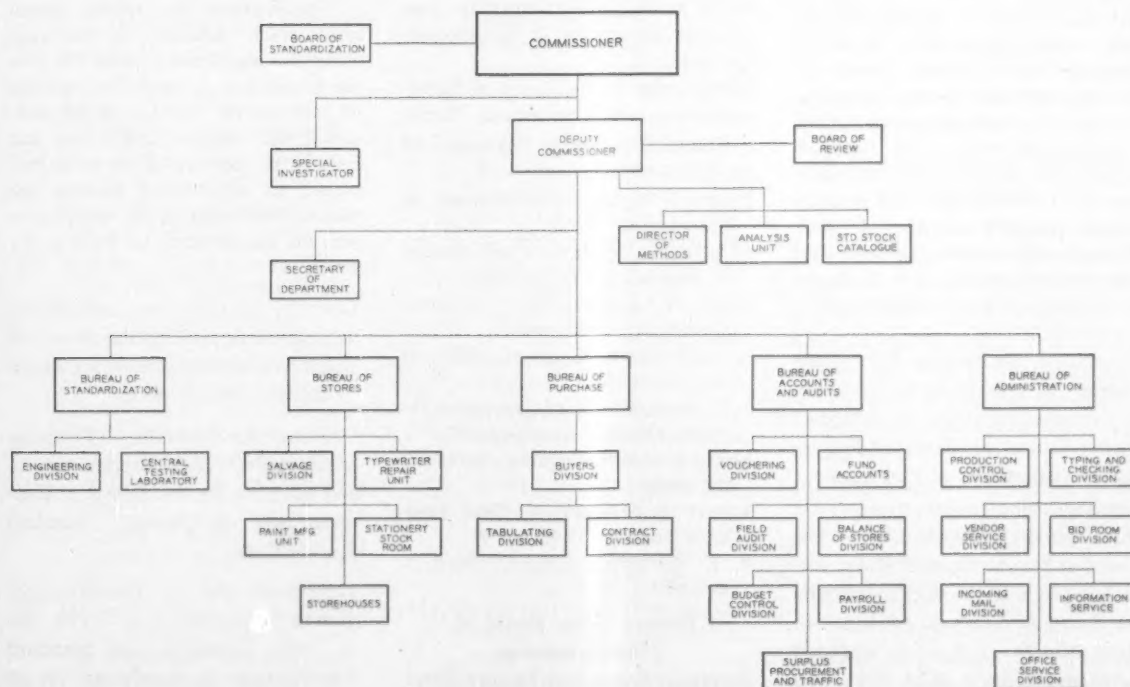
### Bureau of Standardization

The Bureau of Standardization (Nicholas A. De Maio, Chief) consists of an Engineering Division and



Joseph V. Spagna  
N. Y. Commissioner of Purchase

### THE CITY OF NEW YORK DEPARTMENT OF PURCHASE ORGANIZATION CHART



a Central Testing Laboratory. The Engineering Division is the technical arm of the Department of Purchase and the working arm of the Board of Standardization.

The primary function of the Central Testing Laboratory is the testing of samples of delivery of supplies and materials purchased by the City of New York to enable the Office of Comptroller to properly audit claims for payment.

### Board of Standardization

**Legal Authority for Standardization.**—The authority and responsibility for standardization is vested in the Board of Standardization as set forth in Section 783, Chapter 33 of the Charter of the City of New York, which reads as follows:

"There shall be in the department, a board of standardization, to consist of: the commissioner or his representative, who shall act as chairman of such board; an engineer from the board of estimate; an engineer and another subordinate of the comptroller to be designated by the comptroller; a representative of the budget director; an engineer and one other employee from the department of purchase to be designated by the commissioner; all of whom shall serve upon such board without additional compensation. It shall be the duty of such board to classify all supplies, materials and equipment; to adopt as standards the minimum number of qualities, sizes and types of commodities consistent with efficient operation; to prepare and submit to the board of estimate for adoption, and after such adoption to promulgate and enforce, written specifications for all such standard commodities and pending submission to and action by the board of estimate, to adopt tentative specifications."

**Exemption.** By Section 785 of the Charter, its provisions do not apply to purchases by or for the Board of Higher Education, Board of Education or Department of Education.

**Legal Authority for Acceptable Brands Lists and Only Lists.**—The Board of Standardization is also empowered by a Resolution adopted by the Board of Estimate on June 30, 1949 (Cal No. 318-A) as amended January 29, 1953 (Cal 238) and March 26, 1953 (Cal 33) to pro-



Mr Kaidanovsky is Technical Director of the Management and Technical Services, New York. He was formerly chairman, Federal Interdepartmental Standards Council; technical consultant, Federal Specifications Board, and editor, Standards World.

mulgate "Acceptable Brands Lists" and "Only Lists," section 12 of which reads in part as follows:

"A contracting agency may promulgate with the approval of the Board of Standardization, lists of two or more acceptable brands, makes or types of patented or non-patented, proprietary or non-proprietary articles in the same competitive class . . . Such 'acceptable brands' lists after promulgation, may be augmented or reduced by the addition or removal of any acceptable brand, make or type of article or may be rescinded at any time, with the approval of the Board of Standardization. If, by reducing a brands list only one acceptable brand remains, such brands list shall be rescinded. The remaining item may be promulgated as an 'only' list as provided hereinafter by Section 12(b)."

Section 12(b) reads in part as follows:

"A contracting agency may promulgate with the approval of the Board of Standardization an 'only' list of a particular brand of a patented or non-patented proprietary or non-proprietary item. . . ."

**Membership of the Board of Standardization.**—At present the Board of Standardization is composed of the following members:

Joseph V. Spagna—Commissioner of Purchase, *Chairman*  
Nicholas A. De Maio—Chief, Bureau of Standardization, *Secretary*  
Victor P. Krauss—Chief Engineer, Department of Purchase  
A. J. Erickson—Engineer, Office of the Comptroller  
J. P. Dempsey—Chief, Inspection Division, Office of the Comptroller  
Morris Krasnoff—Engineer, Bureau of the Budget  
Robert G. McCullough, Chief Engineer, Board of Estimate  
S. I. Sherman—Engineer, Board of Estimate (Alternate)

### Powers of the Board of Standardization

**Power to Waive and Modify Specifications.**—The Board of Standard-

ization is empowered to revise and rescind existing specifications and promulgate new standards. Where a specification is inapplicable for various reasons, the Board, in the interest of expediency, has authorized the Commissioner of Purchase temporarily to modify or waive such specifications pending formal revision or rescission, and report such action to the Board at its subsequent meeting.

**Use of Laboratory and Engineering Facilities of City's Agencies.**—The Board of Standardization is empowered to use laboratories, engineering facilities, and technical staff of any agency in connection with its work of preparing and adopting standards and written specifications.

**Determination of Agency Requirements.**—The Board of Standardization, after consultation with various using agencies, determines their requirements and prescribes standards of quality and performance for the commodities which meet the needs of the majority of such agencies.

### Types of Specifications and Their Use

**Definition of Specifications.**—As defined by the City of New York:

"Specifications are written standards which describe, in technical terms, the user's needs, what the vendor is required to supply, the method of packing, the marking of the individual and shipping containers, and include the methods of test to be employed in determining whether the product delivered is in compliance with the requirements set forth in the standard."

**Tentative Specifications.**—Specifications promulgated by the Board of Standardization are designated "Tentative Specifications."

**Standard Specifications.**—Tentative Specifications after submission to, and adoption by the Board of Estimate are designated "Standard Specifications."

**Mandatory Use of Tentative-and-Standard Specifications.**—The use of both Tentative and Standard Specifications is mandatory on all agencies, except those agencies em-

powered by the Charter to set their own standards.

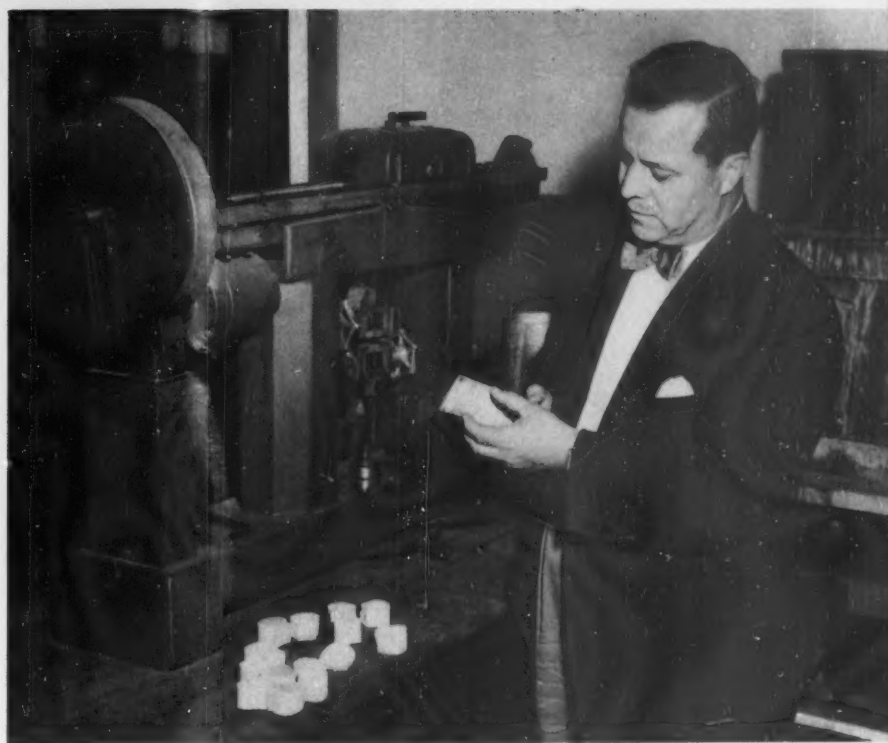
*Exemption from the Use of Specifications by the Board of Estimate.*—The Board of Estimate may exempt any agency from the use of the commodity as described in a specification.

*Written-in-Specifications.*—Most of the specifications promulgated by the Board of Standardization are concerned with supplies and those materials which are consumed in comparatively large quantities and purchased usually in bulk. In certain cases, equipment and specialties do not lend themselves to standardization, and specifications are "written-in" by the buyer. These specifications are designated "Written-in Specifications." In preparing such specifications, the buyer consults with the engineers of the Purchasing Department specialists of other City agencies or private commercial firms. "Written-in Specifications" are used only when adequate standard or tentative specifications do not exist.

#### Outline of Form of New York City Specifications

The form of New York City Specifications, in general, is as follows:

- (1) *Intent*—Describes the material by name.
- (2) *Kind*—Describes number of kinds and types of material.
- (3) *Size*—Details various sizes covered by the specification.
- (4) *Color*—Specifies various colors where necessary.
- (5) *Material and Workmanship*—Describes these items in general.
- (6) *Chemical and Physical Requirements*—Details the requirements or refers to compliance with certain other specifications (Federal, ASA, ASTM, etc), latest revision in effect at the time of invitation to bid.
- (7) *Sampling*—States minimum quantity to be taken for test purposes.
- (8) *Methods of Test*—Requires that the commodity shall be tested in accordance with the methods prescribed, or by reference to certain other speci-



A plywood specimen which has been tested on tensile tester is being examined by Mr N. A. De Maio, Chief, Bureau of Standardization.

- fications (Federal, ASA, ASTM, etc), latest revision in effect at the time of invitation to bid; provided, however, that any applicable method of test or examination satisfactory to the Central Testing Laboratory or other laboratory designated by the Comptroller of the City of New York may be employed.
- (9) *Packing*—States that packing shall be in accord with best commercial practice and when necessary gives further details. It requires that on any single contract or open market order, only one brand may be furnished; mixed lots of different origin, trade mark, or brand will not be accepted.
- (10) *Identification*—Describes requirements as to marking material, containers, packing cartons, etc, with name, number of contract or open market order, manufacturer's name, size, type, quantity of material contained, etc.
- (11) *Bid Sample*—Describes requirements as to the submission of samples by the bidder.
- (12) *Appendix*—Contains information for requisitioning agen-

cies of the City departments as to the specifications and its use.

This form is not fixed, but is modified as required. Some specifications include qualifications of bidders, certificates of bidders, certificates of tests, and other necessary and pertinent requirements dependent on the commodity.

#### Identification of New York City Specifications

Each individual specification is identified by a symbol. For example, Tentative Specification for Underpads, Bed Linen Protection, adopted by the Board of Standardization on March 25, 1954 and which became effective March 31, 1954, is identified as follows: 19-U-2:54T, where—

- (a) The number "19" refers to the specification class (Hospital Supplies and Surgical Instruments)
- (b) The capital letter "U" refers to the first letter in the name of the commodity (Underpads)
- (c) The next number "2" identifies the particular specification within the class letter sequence



- (d) The third number "54" denotes the year of adoption
- (e) The capital letter "T" signifies adoption by the Board of Standardization as a Tentative Specification

When a specification is being amended, the number of amendments to the specification during the year of adoption is indicated by a number in parenthesis after the letter "T."

The capital letter "S" following the year of adoption signifies the adoption by the Board of Estimate as a Standard Specification.

There are at present 510 Tentative and Standard Specifications.

**Future Planning Regarding Specification Classification.**—The classification of commodities used in identifying specifications was developed in 1912 by the Commission on Standardization appointed by the Select Committee on Standardization of Supplies, created by the Board of Estimate. Consideration is being given to study this classification with a view of coordinating it with stores commodity classification and the procurement classification.

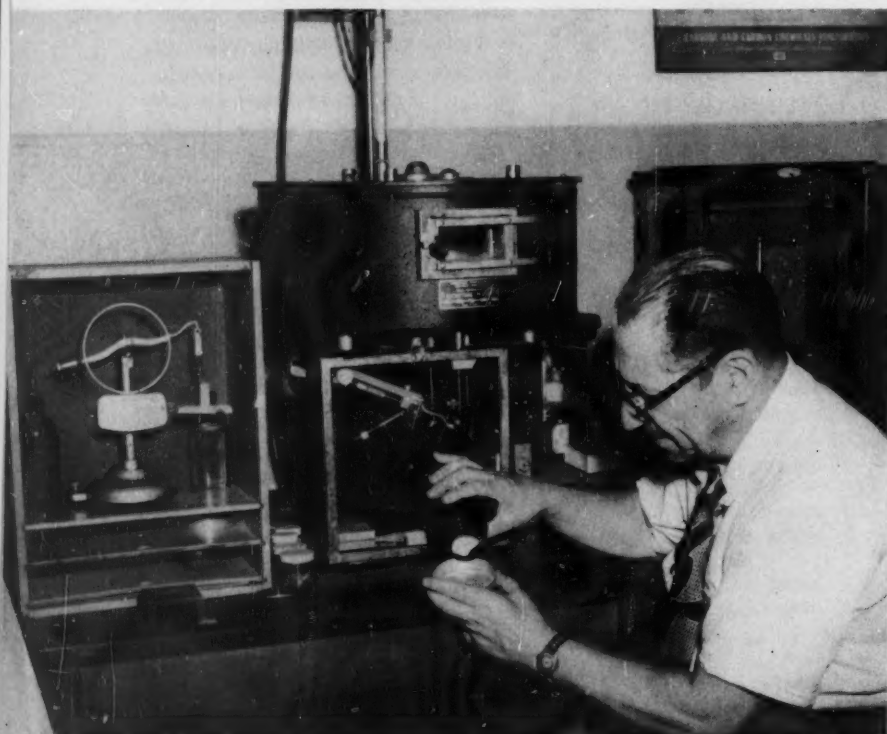
### Acceptable Brands Lists

For certain commodities, no satisfactory specification can be prepared. The reason for this is manifold: (1) Tests require a long time for completion; (2) Testing equipment is unavailable or complicated; (3) Performance of a commodity can be determined only after a long period of continuous service. Purchase of such commodities is confined only to certain acceptable brands. For this purpose an Acceptable Brands List is established comprising a group of two or more brands of a commodity in the same competitive class. The listing of such brands is based on results of laboratory tests or performance record which prove such brands to be more satisfactory for city use than other brands.

Acceptable Brands Lists are promulgated by the Board of Standardization and their use is mandatory on all city agencies in the purchase of supplies, materials, and equipment, except those specifically exempted by the Charter, by legal determination, or otherwise.

### Identification of Acceptable Brands

**Determining moisture, 10 samples at a time, by means of a Brabender Moisture Tester**



**Lists.**—Each Acceptable Brands List is identified by a symbol. For example, Acceptable Brands List for Electrocardiograph, Direct Writing, approved for promulgation by the Board of Standardization on December 3, 1953, to become effective December 7, 1953, is identified as follows: AB-19-4(12-53), where —

- (a) The letters "AB" indicate that it is an Acceptable Brands List.
- (b) The first number "19" refers to the Specification Class (Hospital Supplies and Surgical Instruments).
- (c) The second number "4" indicates the sequence of the particular list within that class.
- (d) The first number "12" and the second number "53" in parenthesis represent respectively the month (December) and the year (1953) of approval by the Board of Standardization.

There are at present 86 Acceptable Brands Lists.

### Only Lists

When only one brand of a commodity has been determined by laboratory test or performance record to be most satisfactory for city use, a so-called "Only List" is promulgated by the Board of Standardization.

**Identification of Only Lists.**—Each "Only List" is identified by a symbol. For example, Only List for Paper Filter approved for promulgation by the Board of Standardization on May 7, 1953, to become effective May 11, 1953 is identified as follows: OL-1-2(5-53), where—

- (a) The letters "OL" indicate it is an Only List.
- (b) The first number "1" refers to the Specification Class (Apparatus, Laboratory).
- (c) The second number "2" indicates the sequence of the particular list within that class.
- (d) The first number "5" and the second number "53" in parentheses represent respectively the month (May) and the year (1953) of approval by the Board of Standardization.

There are at present 72 Only Lists.

### Engineering Division — Bureau of Standardization

The primary function of the Engineering Division is the preparation of drafts of new tentative specifica-

tions and amendments, and revision of existing tentative and standard specifications for presentation to the Board of Standardization for its action. This Division is also responsible for the preparation of recommendations to the Board of Standardization on action to be taken on promulgation and revision of Acceptable Brands Lists and Only Lists. The Engineering Division also reviews and makes recommendations on proposed temporary waivers of existing specifications, Approved Brands Lists, and Only Lists before approval by the Commissioner of Purchase and ratification by the Board of Standardization.

The Engineering Division is also charged with the performance of the following services:

*(1) Services to Using Agencies:*

(a) Assistance in the proper selection of materials for purposes of procurement; (b) Review of specifications submitted with requisitions for the purpose of eliminating restrictive clauses and ambiguities, clarification of technical requirements, methods of tests, etc; (c) Investigation, reporting, and clearance of complaints regarding performance of materials procured through the Department of Purchase.

*(2) Services to the Bureau of Purchases:*

(a) Supplying technical information to buyers in their day-to-day activities; (b) Comparison of products offered by vendors to resolve problems of equality with bid standards; (c) Outlining tests and test methods for products and interpretation of tests results obtained.

*(3) Services to the Inspection Division, Office of the Comptroller:* Assistance in cases of rejection of deliveries and determination of deductions where delivery did not fully comply with specifications.

### Procedure for Development of Specifications

A using agency may prepare its own specification and submit it to the buyer for review and comments. If necessary, the buyer refers the specification to the Engineering Division for technical information, especially when its requirements call for laboratory or performance tests. The Engineering Division, after re-

### Titration excess alkali in determination of the fatty oil content of lubricating oils

viewing the specification, makes changes if necessary and submits the revised specification to the buyer. The specification is tested by the Engineering Division for a trial period to ascertain if standardization of the commodity is advisable; if so, consultation is held with using agencies and representatives of the industry. The Engineering Division then prepares a draft of the specification for submission to the Board of Standardization.

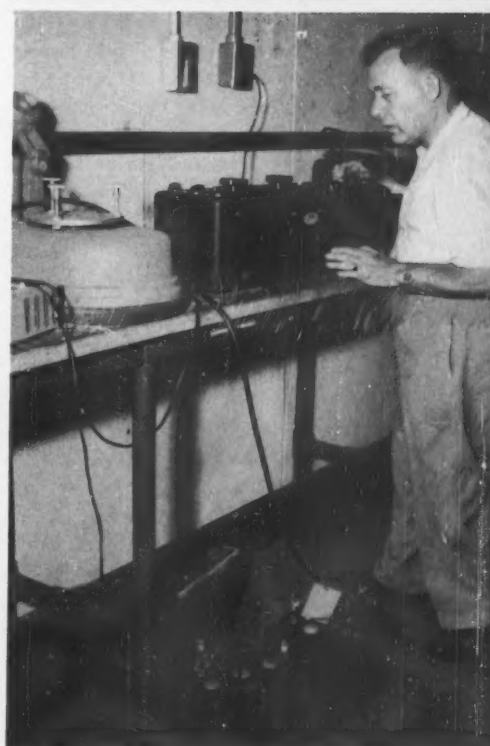
### Future Planning Regarding Standards and Specifications

In order to avoid the use of ambiguous specifications which limit competition and result in high prices; to discourage wherever possible the requisitioning of commodities by catalog number and the buying on "brand name or equal"; to preclude the writing of departmental or agency specifications, Commissioner Spagna is planning to streamline operations in order to achieve savings resulting from a coordinated program of standardization.

One of the immediate projects to be considered is the review of existing New York City standards and specifications, the elimination of unnecessary grades, kinds, and types of commodities, and the consolidation of purchases for different agencies in the City Administration under one specification for a particular commodity. An effort will be made to avoid the preparation of new New York City specifications wherever possible and instead to use by reference or adoption existing Federal Specifications and applicable specifications of nationally recognized standardization bodies and specifications of technical and professional societies. Following the policy adopted by the Federal Government in recently issued regula-

*(continued on page 302)*

**Using a Beckman Electrophotometer to determine small amounts of vitamins, phosphates, silicates, etc**



(continued from page 301)

tions paving the way for broader industry participation in the development of Federal standards and specifications, consultation and advice of industry in the preparation of New York City specifications, though already practiced, will be further expanded.

#### **Inspection and Testing of Supplies, Materials, and Equipment**

*Legal Authority for Inspection.*—The authority and responsibility for the inspection of supplies, materials, and equipment is vested in the Comptroller as set forth in section 346, Chapter 13 of the Charter, which reads as follows:

"Inspection and acceptance or rejection of all deliveries of supplies, materials and equipment shall be made by the Comptroller."

*Inspection Division.*—The Inspection Division, Office of the Comptroller, (J. P. Dempsey, Chief) is in charge of inspection. Commodities delivered to the Department of Purchase storehouses and using agencies are inspected for compliance or non-compliance with the requirements of the specifications under which they were procured. Many commodities are accepted or rejected by the inspectors on the basis of field inspection. In the course of inspection, commodities may require chemical or physical tests, analyses, and examinations. In such cases samples are sent by the inspectors to any laboratory designated by the Inspection Division, but customarily to Central Testing Laboratory.

*Central Testing Laboratory.*—The Central Testing Laboratory, after performing the necessary tests, reports the test results to the Inspection Division, indicating compliance or non-compliance of the sample with specification requirements. The laboratory does not have the power to "accept" or "reject" deliveries; that is exclusively a function of the Inspection Division. A laboratory report on a delivery sample is only one factor to be given consideration in determining whether the delivery is satisfactory or not.

The Inspection Division is, how-

ever, not the only source of samples received at the laboratory. Practically all other agencies of the City government avail themselves of the laboratory's services at some time or other. Tests are conducted for Departments of Parks, Marine and Aviation, Fire, Water Supply, Gas and Electricity, Health, Hospitals, Public Works, and also for the Board of Education, New York City Housing Authority, and other agencies.

Samples of commodities are also submitted to the Central Laboratory for informational purposes either in connection with awards on bid openings or for use in the development of specifications by the buyers of the Bureau of Purchase and by engineers of the Engineering Division.

Approximately 6500 samples are being analyzed yearly, mainly coal, fuel oil and kerosene, gasoline, oils and greases, paints and paint brushes, food products, fire combustibles, and other commodities. In addition to the foregoing, the laboratory tests approximately 100,000 thermometers annually.

#### **Future Planning Regarding Testing of Samples**

Commissioner Spagna is planning to transfer the laboratory to a more appropriate location and to consolidate some of the testing facilities with a view to improving operations. The problem of repetitive testing of such products as thermometers, fuels, oils, and other products, samples of which are tested in great quantities, will be studied. The purpose of the study is to determine the extent to which such repetitive tests should be performed and to develop methods for increasing the number of composite test samples.

#### **Storage of Supplies and Materials**

Certain supplies and materials for recurring maintenance, operational, and administrative needs can be purchased most advantageously in bulk and stored in warehouses for issue to many locations in small lots. The centralized stores system of the De-

partment of Purchase is developed on a commodity rather than a regional service basis.

#### **Identification and Numbering of Supplies and Materials**

*Standard Stock Catalog—Guide in Requisitioning.*—The Standard Stock Catalog and Coding Division, (Ruth Rotner, Editor) is responsible for the editing and issuance of the Standard Stock Catalog and assignment and control of commodity code numbers. This serves as a guide to City agencies in requisitioning supplies and materials for their needs. Supplements to the Standard Stock Catalog are issued quarterly based on information received from storekeepers, buyers, and other sources, regarding new items, new sizes, changes in commodity code number, changes in location, and obsolete or discontinued items. At present the Standard Stock Catalog lists approximately 22,000 stock items. Additional 8000 items carried in stock, are not shown in the catalog, but are indicated in broad classification, such as "Motor Vehicles and All Accessories, Parts and Equipment," together with directions for requisitioning.

*Structure of the Standard Stock Catalog.*—The Standard Stock Catalog contains standard descriptions of all items carried in stock by the Department of Purchase storehouses together with latest applicable specifications number, budget expense account number, commodity code number, unit of issue, and the storehouse where the item is carried.

*Commodity Classification.*—The Standard Stock Catalog proper is divided into 79 commodity classes that are practically the same as the Federal Standard Stock Catalog Classes of the Federal Supply Service, General Services Administration. Within each class of the Standard Stock Catalog the stock items are arranged alphabetically; the Catalog is prefaced by an index listing all stock items alphabetically.

*Commodity Code Number.*—The commodity code number for  $\frac{3}{4}$  x



22 in. Bolt, Machine Steel A.S.R., with square head and square nut, is 43-B-19836 where:

- (a) The first number, "43", denotes the commodity class "Bolts; Nuts; Screws; Washers"; etc;
- (b) The letter "B" denotes the first letter of the word "Bolt";
- (c) The last number, 19836, identifies the particular item (type of bolt, material, type of head and nut, and size).

### Coordination of Commodity Classification Systems

A review of the commodity classification systems used by the Department of Purchase reveals the existence of three different systems:

1. *Specification Classification System* used for designation of specifications, consisting of 42 commodity classes arranged in alphabetical order from Apparatus, Laboratory, to Wire and Wire Rope.

2. *Standard Stock Catalog Classification System*, consisting of 79 commodity classes practically identical with the classes of the Federal Standard Stock Catalog of the Federal Supply Service, General Services Administration. The latter classification is now being superseded by the Federal Supply Classification for use in classifying items of supply identified under the Federal catalog program.

3. *Procurement Classification System* consisting of 41 commodity classes for the purpose of assigning commodities to buyers of the Bureau of Purchase.

In addition there is an *Expense Account Classification System* for supplies, materials, and equipment to which various commodities are charged by the Office of the Comptroller.

*Future Planning Regarding Commodity Classification Systems.*—The analysis of the commodity classification systems used by the Department of Purchase will be undertaken with a view to coordinating the various classifications and installing a single classification system adaptable to the various operations of the Department.

### Looking Forward

Recognizing the fact that standardization is an essential tool of supply management which can be utilized to achieve savings to the

entire City, Commissioner Spagna will take the necessary steps to implement the following plans:

1. Review of existing specifications with a view toward insuring that they reflect the best trade practices and technological advances.
2. Reduction to a minimum of the number of purchases based on catalog number, "brand name or equal," by substituting descriptive specifications.
3. Review of acceptable brands and "only lists" for the purpose of developing specifications based upon case histories over a trial period.
4. Conversion of departmental and

"written in" specifications to formal standards or to specifications adapted from governmental or industrial specifications.

5. Consolidation of testing facilities in the laboratory, and reduction in the number of repetitive tests.

6. Coordination of the various commodity classification systems.

7. Improvement of Department of Purchase operations through the greater use of standard procedures.

### STANDARDIZATION DOES NOT COST—IT PAYS

## WHAT IS YOUR QUESTION ?

**Where can I locate a step by step procedure for making a fire hazard and safety inspection of low voltage (440 volts and under) electrical equipment, particularly motors?**

The American Standard National Electrical Code, C1-1953, Article 430, gives complete requirements for motors and controllers. This standard is used by many municipalities as a guide for their inspection procedures. Other than this, ASA knows of no inspection standards of the type requested. The electrical inspectors in the municipality concerned may be able to help.

**Where can I get information concerning standardization of lock nuts?**

There are no American Standards for nuts that are self-locking. However, this term "lock nut" is used also for a nut used to lock another nut in position. This type of nut is covered by the tables containing data for "jam nuts" that are part of the American Standard B18.2-1952, Square and Hexagon Bolts and Nuts.

**Where can we obtain standards for use in inspecting and overhauling machine tools?**

This question was asked in a slightly different form in the June

issue (page 193). Since publication of the reply, which referred to American Standard B5.16-1952, a reader has called our attention to an interesting book, *Testing Machine Tools* by Schlesinger. This book was published in London, England, in 1945 by the Machinery Publishing Company, Ltd. It can be secured by their American affiliate, The Industrial Press, 148 Lafayette Street, New York.

**What do the initials CIGRE stand for?**

This abbreviation stands for Conference Internationale des Grands Reseaux Electriques (International Conference on Large High Tension Electric Systems).

**The Navy requires compliance with "ASA B27.7-1944" in bids for lockwashers. May we have a copy?**

The standard referred to is the American Standard for Lockwashers, B27.1-1944, now revised as B27.1-1950. The number "B27.7" is a typographical error.

**Are there standards for cast iron spigots and bell pipes for water supply?**

American Standard A21.2-1953 contains such standards, which agrees with the American Water Works Association standard C102.



*Sidney W. Taylor*



*M. A. Pisciotta*

## New Engineers on ASA Staff

**Sidney W. Taylor** has joined the staff of the American Standards Association as engineer in charge of ASA staff operations for mechanical standardization projects. He will also serve as secretary of the Mechanical Standards Board.

Mr Taylor is a graduate of Rutgers University with a degree in Mechanical Engineering, and has had experience in machine design and parts inspection and production. As machine designer with the Frank W. Egan Company, Bound Brook, New Jersey, he was concerned with the design of special equipment used in the paper converting and plastics industries. For the past three years he has been with Allied Processes of New York City, working on assignment to DuPont Photo Products as a machine designer in special experimental equipment.

**M. A. Pisciotta** has joined the staff of the American Standards Association as assistant in the work on electrical engineering.

Mr Pisciotta is a graduate of the College of the City of New York, with the degree of Bachelor of Electrical Engineering. His military service was in the Air Corps where he served as airplane and engine mechanic and flight engineer. Since his graduation, he has had experience with the New York State De-

partment of Public Works in electrical layout of lighting for highway construction; and with the Civil Aeronautics Administration as a radio engineer in connection with installation of navigational aids, such as instrument landing and omni range systems. He has served with Western Electric Company for the past several years as equipment engineer in connection with central office layout and specification writing.

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### Mackenzie and Winkler Honored by ASTM

Two men who have long been active in the work of the American Standards Association, as well as in the American Society for Testing Materials, were made Honorary Members of ASTM, the Society's highest honor, at its annual meeting in June.

K. G. Mackenzie, Petroleum Consultant, retired Vice-President, Texaco Development Corporation and L. H. Winkler, Metallurgical Engineer, Bethlehem Steel Company, were honored for their outstanding service. Mr Mackenzie, who has been a member of ASA's Standards Council for the past two years, has been a member of ASTM since

1912. He gave valuable service to the Society's technical work as Secretary of ASTM Committee D-2 on Petroleum Products and Lubricants for eight years and as Vice-Chairman for several years. He also served as a member of Committee D-4 on Road and Paving Materials, D-8 on Bituminous Waterproofing and Roofing Materials, D-9 on Electrical Insulating Materials, E-1 on Methods of Testing and E-8 on Nomenclature and Definitions.

Mr Mackenzie represented ASTM on the Fuels and Lubricants Technical Committee of the Society of Automotive Engineers for several years, and was a representative of the American Institute of Mining and Metallurgical Engineers on ASA Sectional Committee Z11 on Petroleum Products and Lubricants for many years.

Mr Mackenzie was a member of ASTM's Executive Committee in 1925-1927, Vice-President 1928-1930, and President 1930-1931.

From 1950 to 1954 he was one of the three American representatives on the Permanent Council of the World Petroleum Congress, and since 1950 has been Secretary of its National Committee for the United States.

Mr Winkler has represented ASTM for many years on ASA Sectional Committee B31, Code for Pressure Piping and on the ASA Mechanical Standards Board. On ASA's Standards Council and on Sectional Committee B36, Standardization of Dimensions and Materials of Wrought-Iron and Wrought-Steel Pipe and Tubing, he has served as representative of the American Iron and Steel Institute.

In ASTM, he has been a member of the Board of Directors (1946-1949) and has been active on a number of technical committees, including Committee A-1 on Steel, Committee A-5 on Corrosion of Iron and Steel, and Committee B-1 on Wires for Electrical Conductors. He is chairman of Subcommittee XII on Methods of Testing of Committee A-1 and serves on a number of subcommittees of the other technical committees.

# FROM OTHER COUNTRIES

Members of the American Standards Association may borrow from the ASA Library copies of any of the following standards recently received from other countries. Orders may also be sent to the country of origin through the ASA office. Titles are given here in English, but documents are in the language of the country from which they were received. An asterisk \* indicates that the standard is available in English as well. For the convenience of readers, the standards are listed under their general UDC classifications. In ordering please refer to the number following the title.

## 371.6 SCHOOL APPARATUS

### New Zealand (NZSS)

Standard specification for school requisites: Part 2, White and colored chalks  
NZSS 660, Part 2,  
Nov 1952

## 389 METROLOGY. WEIGHTS AND MEASURES

### Austria (ÖNA)

Preferred numbers  
ÖNORM A 2750

### Netherlands (HCNN)

Explanatory manual on preferred series  
V 3070

### Portugal (IGPAI)

Rules for identification symbols of Draft, Provisory and Approved Portuguese Standards  
NP-1

### Spain (IRATRA)

Anglo-saxon and metric weights and measures. Conversion table  
UNE 4023

## 389.6 STANDARDIZATION

### Portugal (IGPAI)

Layout of Portuguese Standards forms  
NP-2/3

## 511/.1 ARITHMETIC. THEORY OF NUMBERS. NUMERATION

### Portugal (IGPAI)

Method of writing numbers  
NP-9  
Nomenclature of large numerical values  
NP-18

## 516 ANALYTICAL GEOMETRY SPAIN (IRATRA)

Definition of sense of rotation in plane and in space  
UNE 5017

## 531.78 MEASUREMENT OF FORCE, WORK AND PRESSURE

### Sweden (SIS)

Stand for length indicator  
SMS 1377

## 532 MECHANICS OF FLUIDS, HYDRAULICS

### Israel (SII)

Water flow measurement in pipes by ISA Standard Nozzle  
S.I. 97

### Spain (IRATRA)

Definition of standard characteristics of turbines  
UNE 5018

## 536 HEAT. THERMODYNAMICS

### Portugal (IGPAI)

Standard temperature  
NP-22

### United Kingdom (BSI)

Code for disappearing-filament optical pyrometers  
BS 2082:1954  
Calorimeter thermometers  
BS 791:1954

## 54 CHEMISTRY

### United Kingdom (BSI)

Capillary pipettes  
BS 797:1954  
Alkoxy and alkylimino group determination apparatus  
BS 1428: Part C1:1954

Acetyl group determination apparatus (Wiesenberger)  
BS 1428: Part C2:1954

Weighing pipettes  
BS 2058:1953

Methods of testing essential oils  
BS 2073:1953

Ammonia distillation apparatus (Markham)  
BS 1428: Part B2:1953

Micro-beakers  
BS 1428:Part E2:1954

Soxhlet extractors  
BS 2071:1954

Gas sampling tubes  
BS 2069:1954

Gas washing bottles  
BS 2461:1954

## 542.1/.23 CHEMICAL LABORATORY EQUIPMENT

### Germany (DNA)

Test tubes  
DIN 12395

Butyrometers  
DIN 12836/37

### Netherlands (HCNN)

Classification of the material and test methods  
N 1747

Determination of thermal shock strength  
N 1748

Volumetric glassware—general specification  
V 1749

Measuring flask, with and without stopper  
V 1750

Measuring cylinders, with and without stopper  
V 1751/52

Volumetric glassware—pipettes, burettes  
V 1753/55

## 543 ANALYTICAL CHEMISTRY

### France (AFNOR)

Water analysis. Determination of carbonic acid content  
NFT 90-011

### India (ISI)

Potassium bichromate, Reagent  
IS:250

## 546 INORGANIC CHEMISTRY

### India (ISI)

Potassium metabisulphite, pharmaceutical and photographic  
IS 500

## 614.8/.89 PREVENTION OF ACCIDENTS. SAFETY MEASURES

### Germany (DNA)

Fire hydrants  
DIN 14244

Carrying bags for grappling rope  
DIN 14921

Fire-alarm boxes  
DIN 14650

Fire-hose protective crate  
DIN 14820

Belt buckle and button of fireman's uniform  
DIN 14941

Wrench for hose coupling  
DIN 14822

Lifting power of fire pumps, general rules  
DIN 14410

### South Africa (SABS)

Standard specification for kapok and cork-type life-jackets  
SABS 402-1953

Standard specification for men's derby-type safety boots for use in heavy industry  
SABS 437-1953

### Spain (IRATRA)

Five standards for different types of protective goggles  
UNE 43153; -43158/59; -43161/62

### Sweden (SIS)

Hydrant key  
SMS 1188

### United Kingdom (BSI)

Industrial safety helmets (light duty)  
BS 2095:1954

Canaster respirators ("gas masks") and dust respirators ("dust masks")  
BS 2091:1954

Industrial eye-protectors for operations other than welding  
BS 2092:1954

## 621.3 ELECTRICAL ENGINEERING

### Austria (ÖNA)

Metric thread for nipples  
ÖNORM E 1300

Housing for electric apparatus of low and medium voltage  
ÖNORM E 1350

Reels for bare and insulated wires  
ÖNORM E 3805

Three-phase motors, enclosed type  
ÖNORM E 4601

Insulated steel conduits and branch boxes  
ÖNORM E 6502

Electric water heater  
ÖNORM E 6800

### Canada (CSA)

Construction and test of electrical equipment for woodworking machinery  
CSA C22.2 No. 105-1953

Construction and test of electrically heated warming pads  
CSA C22.2 No. 15-1954

Construction and test of cord sets and power-supply cords  
CSA C22.2 No. 21-1954

Construction and test of insulated conductors for power-operated radio devices  
CSA C22.2 No. 16-1954

Construction and test of electrically operated refrigerating machines  
CSA C22.2 No. 32-1954

Construction and test of electric fence controllers  
CSA C22.2 No. 103-1954

Inductive coordination, definitions, principles and practices (outside wiring rules)  
CSA C22.3 No. 3-1954

### Nationalist China (CNS)

Scale of standard low voltages  
CNS 316-C17

Scale of standard currents  
CNS 317-C18

Testing of AC circuit breakers  
CNS 318-C19

### Czechoslovakia (CSN)

Copper bus bars  
CSN 42 1317, 42 8308

Insulating bushings  
CSN 72 5752/53

Stop collar for insulating bushing  
CSN 02 2924

Insulating ceramic beads  
CSN 72 5760

Rotating machinery shaft end heights  
CSN 01 0205

### Finland (SFS)

Heating rod  
C. III. 11

Screw thread for wiring conduits  
C. V. 12

Gages for conduit nuts and threads  
C. V. 14

Receptacle, 3-pole and ground, 10 amp 380 v  
C. V. 16

Switch and fuse box and parts  
C. V. 21/23

### France (AFNOR)

Graphical symbols for the use on electrical diagrams  
NFC 3-100

### Germany (DNA)

Dry rectifier  
DIN 41750

Reels for cables and wires  
DIN 46391

Mounting holes for switchgears  
DIN 43604

D-type fuse bases E27, 25 amp 500 v  
DIN 49326

D-type fuse bases E33, 60 amp 500 v  
DIN 49327



Ring and plug gages for D-fuse E17, E27 and E33 DIN 49363  
 Magnetic cores for telecommunication coils DIN 41287/88  
 Ceramic capacitors DIN 41341  
 Variable capacitors, air dielectric DIN 41360, B1.2  
 Insulated bushings for inside installation of transformers, 10-30 kv, 1000-3000 amp DIN 42533  
 Chock valve for transformers DIN 42560  
 Insulator brackets for overhead power line under 1 kv voltage DIN 48051  
 2-pole plugs for heating appliances, 10 amp 250 v DIN 49490 B1.2  
 Lead plates for stationary storage batteries DIN 40730  
 Telephone jack switch DIN 41030  
 Dry metal rectifiers: wiring diagrams DIN 41761  
 Circuit disconnecter for inside mounting one- and three-pole, up to 30 kv, 600 amp DIN 43607  
 D-type screw plug fuses E33, 60 amp 500 v DIN 49327, B1.2  
 Fitting rings for D-type fuses E27 and E33 DIN 49362  
 Testing of insulating oils DIN 51555  
 Insulated steel conduits DIN 49020, -49026  
 Expansion strip for busbars DIN 46276  
 Switches, 6-15 amp, 250 v DIN 49200/01  
 Two-pole plug and receptacle 15 amp 250 v DIN 49402  
 Two-pole plug and receptacle 10 and 15 amp 250 v with safety contact DIN 49441  
 Mounting bolts for electricity meters DIN 46300  
 Stationary storage batteries DIN 40731  
 Microphone plug DIN 41624  
 2- and 3-pole plugs for telecommunication DIN 41627/28  
 Cores of small transformers, chock, etc. DIN 41303  
 Color code for base bus bars DIN 40705  
 Insulating tapes, cotton and artificial silk DIN 40630  
 Fixed electrolytic capacitors DIN 41327

**India (ISI)**  
 Bare annealed high-conductivity copper wire IS:396

**Israel (SII)**  
 Insulated conduits for electric wiring S.I. 25  
 Electric plug and socket outlets Different types of wall switches up to 15 amp 250 v S.I. 32  
 S.I. 33

**Japan (JISC)**  
 Hard-drawn copper wire for electrical purposes JIS C 3101\*  
 Insulating paper for coils JIS C 2304  
 Variable capacitors for radio receivers JIS C 6425  
 Electric fans, desk type JIS C 9601  
 Electric fans, ceiling type JIS C 9602  
 Electric fans, ventilating type JIS C 9603

**Netherlands (HCNN)**  
 Telecommunication, color code for resistors V 1382  
 Packing glands for watertight entry of electric cables V 2113/14, -2116

**New Zealand (NZSS)**  
 Standard specification for flush-mounting wall switches, wall plates and metal outlet-boxes for use on 5- and 10-amp, 250-volt circuit NZSS 931, Sept 1951  
 Standard specification for portable electric immersion water-heaters NZSS 952, Dec 1952  
 Standard specification for portable domestic electric cookers other than ranges or rangesettes NZSS 1055, Feb 1953

**Portugal (IGPAI)**  
 Standard voltages NP-23

**South Africa (SABS)**  
 Standard specification for medium-voltage vulcanized rubber-insulated cables and flexible cords for power and lighting purposes SABS 168-1952  
 Standard specification for vulcanized rubber-insulated cables for telecommunication and signaling purposes SABS 169-1953  
 Electrical equipment safety specification for manually operated air-break switches SABS SV 101-1953  
 Electrical equipment safety specification for portable electric immersion heaters SABS SV 102-1953  
 Electrical equipment safety specification for electric air heaters and radiators SABS SV 103-1953  
 Electrical equipment safety specification for plugs, socket outlets and socket outlet adaptors SABS SV 109-1953  
 Electrical equipment safety specification for electric hand-lamps SABS SV 112-1953  
 Electrical equipment safety specification for electric stoves and hotplates SABS SV 117-1953  
 Electrical equipment safety specification for fixed electric water-heaters SABS SV 105-1953  
 Electrical equipment safety specification for portable electrical appliances for heating liquids SABS SV 107-1953  
 Electrical equipment safety specification for replacement type heating units SABS SV 111-1953

**Spain (IRATRA)**  
 Testing of insulating oils UNE 7071  
 High voltage capacitors UNE 20010

**Switzerland (SNV)**  
 Plugs and receptacles, two-pole, 10 A 250 V for domestic use, Types 1 d, 1 and 11 SNV 24504/06  
 Plugs and receptacles, two-pole and grounding prong, 10 A 250 V, Types 12, 13, 14 SNV 24507/09  
 Insulating tubes with corrugated metal sheath SNV 24721  
 Steel tubes with or without insulation for electrical wiring SNV 24730/36

**United Kingdom (BSI)**  
 Electrical cable soldering sockets BS 91:1954  
 Limits of radio interference BS 800:1954  
 Resistance of conductive and anti-static rubber products BS 2050:1953  
 Glossary of terms for characteristics of radio receivers BS 2065:1954  
 Cotton-covered round copper wires (metric units) BS 2084:1954  
 Electrical indicating instruments BS 89:1954  
 Electronic-valve bases, caps and holders BS 448:1953  
 Characteristics and performance of apparatus for measurement of radio interference BS 727:1954  
 Adhesive insulating tape for electrical purposes BS 1078:1954  
 Dimensions of 3-phase electric motors BS 2083:1954  
 Minimum safety requirements for lighting fittings for use with hot-cathode tubular fluorescent lamps BS 2467:1954  
 The use of electronic valves: Part 1, General; Part 2, Receiving valves cathode-ray tubes and rectifiers (including thyatrons) CP 1005: Parts 1 & 2:1954  
 Metallic resistance materials for electrical purposes BS 115:1954

Cable covers: concrete and earth-enware BS 2484:1954

**Uruguay (UNIT)**  
 Thermoplastic insulated wires for overhead lines UNIT 99  
 Switches and change-over switches 30 amp 250 v UNIT 100

**668 VARIOUS ORGANIC CHEMICAL INDUSTRIES**

**Argentina (IRAM)**  
 Test method for softening point of resins IRAM 1059  
 Chemical analysis of steel alloys IRAM 587/8  
 Chemical analysis of ferro tungsten IRAM 593  
 Aluminum alloy ingots IRAM 621

**Australia (SAA)**  
 Standard specification for mineral turpentine and white spirit AS No. K.8-1953  
 Standard specification for synthetic resin adhesives for plywood (phenolic and amino-plastic) AS No. K.88-1952

**Germany (DNA)**  
 Testing of shoe-sole glues DIN 53272

**India (ISI)**  
 Methods of testing essential oils IS:326

**Japan (JISC)**  
 Urea resin adhesives for wood JIS K 6801  
 Phenol resin adhesives for wood JIS K 6802  
 Casein adhesives for wood JIS K 6803

**Mexico (DGN)**  
 Creosote R 21

**United Kingdom (BSI)**  
 Xyloles BS 458:1953

**672 ARTICLES OF IRON AND STEEL**

**Germany (DNA)**  
 Rollers for conveyor chains DIN 8166  
 Roller chains for endless conveyors DIN 8165

**Norway (NSF)**  
 Small cylindrical containers of pressed tin NS 597/8

**679.5 PLASTIC INDUSTRY**

**Germany (DNA)**  
 Resin bonded laminated paper and fabrics DIN 7735/36

**Netherlands (HCNN)**  
 Determination of the deflection strength and flexion N 1509  
 Heat distortion temperature N 1512

**681.2 INSTRUMENT MAKING**

**Germany (DNA)**  
 Screw plug limit gage, metric thread 1-30 mm DIN 2280

**Japan (JISC)**  
 Pressure gages JIS B 7505  
 Block gages JIS B 7506

**United Kingdom (BSI)**  
 Dial gauges for linear measurement (excluding lever type) BS 907:1954  
 Sizes of sensitized material for recording instruments BS 1193:1954

**681.6 MANIFOLDING AND COPYING MACHINES**

**Germany (DNA)**  
 Names of types of typewriting machines and their parts DIN 2108, B1 1, 2

## 681.84 SOUND RECORDING AND REPRODUCTION

### Germany (DNA)

Pick-up needles DIN 45534

### United Kingdom (BSI)

Magnetic tape sound-recording and reproduction for program interchange BS 1568:1953

## 685 LEATHER WORK

### New Zealand (NZSI)

Standard specification for heels for women's footwear NZSS 668, Nov 1952

### South Africa (SABS)

Standard specification for men's service type Oxford or Gibson shoes (Goodyear welted) SABS 421:1952  
Standard specifications for boys' and youths' school shoes — machine sewn and stitched or Goodyear welted SABS 423/4:1952

## 686 WRITING AND OFFICE NECESSITIES

### Czechoslovakia (CSN)

Fountain pens CSN 90 1540

### Japan (JISC)

Fountain pens JIS B 7107/08

## 687 CLOTHING

### Denmark (DS)

Sizes of ready-made women's clothes DS 920

## 69 BUILDING CONSTRUCTION

### Canada (CSA)

Specification for inorganic aggregates for use in interior plaster CSA A82.57-1954  
Specification for steel structures for buildings CSA S16-1954

### South Africa (SABS)

Comprehensive model building regulations: Chapter 4, excavations and foundations SABS 025-1952  
Standard specification for South African wood shingles for roofs and walls SABS 448-1953

### United Kingdom (BSI)

Farm and horticultural electrical installations (Code of Practice) CP 325 (1953)  
Soil and waste pipes above ground (Code of Practice) CP 304 (1953)

## 69.02 STRUCTURAL ELEMENTS OF BUILDING

### Germany (DNA)

Steel doors, fire-resisting DIN 18081, B1 1, 2

### Norway (NSF)

5 standards for different types of wooden doors NS 772/6

## 691 BUILDING MATERIALS

### Argentina (IRAM)

3 standards for concrete tiles IRAM 1522, 1529/30  
Test method of aggregates by means of the machine "Los Angeles" IRAM 1532  
Concrete, preparations of laboratory test pieces IRAM 1534  
Common putty IRAM 1041  
Special putty IRAM 1090

### Australia (SAA)

Interim specification for burnt clay and shale building bricks SAA Int 323, May, 1953

Interim specification for metal wall ties for brickwork SAA Int 324, May, 1953

Interim specification for lightweight reinforcement for brickwork SAA Int 325, May, 1953

Standard specification and methods of test for Portland cement AS No. A.2-1953

Interim specification for bituminous damp-proof courses with metal center SAA Int 326, August, 1953

Interim specification for bituminous damp-proof courses with fibre felt base SAA Int 327, November, 1953

### Austria (ÖNA)

Magnesite ÖNORM B 3453

### Belgium (NBN)

Concrete tiles NBN 269

### Nationalist China (CNS)

Clay bricks, solid CNS 382-R2  
Hollow bricks CNS 383-R3

### France (AFNOR)

Terminology of metal windows, doors and similar building components NF P 24-101

### Germany (DNA)

Cinder blocks DIN 398

### Holland (HCNN)

6 standards for different types of Portland cement and methods of test N 481, 483/4, 493/5

### India (ISI)

Recommendations for maximum permissible moisture content of timber used in different climatic zones IS 287

Putty for use on wooden and metal frames IS 419/20

Jointing paste for bedding moldings IS 421

Plastic wood IS 623

Plastic asphalt IS 624

### Israel (SII)

Concrete hollow blocks SI 5

Compression testing of hardened concrete SI 106

### Japan (JISC)

Waterproof mortar and cement for building construction JIS A 6101

### Netherlands (HCNN)

Freestones 530

Basalt 532

Magnesium oxychloride flooring. Sub-floor N 1398

Sulfate cement; definitions and test requirements N 1591

Broken and crushed stones for road building N 1561

Natural stones. Tests N 1562

### New Zealand (NZSI)

Standard specification for methods for the testing of concrete NZSS 192, Nov 1952

Standard specification for concrete fencing posts and struts (of other than lightweight concrete) NZSS 1037, Nov 1952

Code of practice for the use in buildings of pinus radiata and other pinus species NZSS CP 2, Feb 1953

### Spain (IRATRA)

Granite pavement blocks UNE 41005

### United Kingdom (BSI)

Asbestos-cement slates and sheets BS 690:1953

Precast concrete blocks BS 2028:1953

Hollow glass blocks BS 1207:1953

Metal wall ties BS 1243:1954

### Uruguay (UNIT)

Plaster, technical, general UNIT 95-53

Chemical analysis of technical plaster UNIT 96-53

Physical and mechanical test of technical plaster UNIT 97-53

## 695 ROOFING. SLATING. TILING

### Canada (CSA)

16 specifications for asphalt and tar roofing CSA 123 Series, 1953

### Ireland (IIRS)

Bitumen damp-proof courses IS 57

## 697 HEATING AND VENTILATION

### Austria (ÖNA)

Safety precaution for hot water boilers ÖNORM B 8131

Stand pipe for low pressure steam boilers ÖNORM B 8132

Layout of hot water heating system ÖNORM B 8133

### Norway (NSF)

8 standards for different types of sheet-metal piping for stoves NS 840/7

## 74 DRAWING

### Austria (ÖNA)

Different graphic symbols for structural materials ÖNORM A 6063

Simplified representation of screws, bolts, etc ÖNORM A 6074

### Norway (NSF)

5 standards for different drawing equipment for school NS 902/6

### United Kingdom (BSI)

Drawing office practice for architects and builders BS 1192:1953

Engineering drawing practice BS 308:1953

Drawing instruments for drawing office use BS 2460:1954

## 77 PHOTOGRAPHY

### Germany (DNA)

Photographic paper for duplication of pictorial and textual documents. Sizes DIN 4518

### Japan (JISC)

2 standards for hand-camera and sub-miniature camera for export JIS B 7107/08

### United Kingdom (BSI)

Sizes of photographic paper for general use BS 1112:1953

8-mm projector spools BS 2013:1953

Studio spotlights BS 2063:1953

Dimensions of amateur roll film backing paper and film spools BS 1491:1954

## 778 APPLICATIONS OF PHOTOGRAPHY

### Belgium (IBN)

Photographic reproduction of documents on paper, readable without optical devices, sizes NBN 320

### Switzerland (SNV)

Terminology for photographic and contact copied documents SNV 90150

### Legend

**Standards Council**—Approval of Standards Council is final approval as American Standard; usually requires 4 weeks.

**Board of Review**—Acts for Standards Council and gives final approval as American Standard; action usually requires 2 weeks.

**Standards Boards**—Approve standards to send to Standards Council or Board of Review for final action; approval by standards boards usually takes 4 weeks.

### Acoustics

#### In Standards Board —

Method for the Free-Field Secondary Calibration of Microphones, Z24.11.

*Sponsor:* Acoustical Society of America.

#### Withdrawal Requested —

American Standard Noise Measurement, Z24.2-1942.

*Sponsor:* Acoustical Society of America.

#### Standard Submitted —

Free-Field Secondary Calibration of Microphones, Z24.11.

*Sponsor:* Acoustical Society of America.

### Building

#### American Standards Published —

Autoclave Expansion of Portland Cement, Method of Test, ASTM C151-53; AASHTO T107-53; ASA A1.8-1954. \$0.25

Fineness of Portland Cement by the Turbidimeter, Method of Test, ASTM C115-53; AASHTO T98-53; ASA A1.7-1954. \$0.25

*Sponsor:* American Society for Testing Materials.

Building Code Requirements for Masonry, A41.1-1953. \$0.20

*Sponsor:* National Bureau of Standards.

#### In Standards Board —

Methods of Fire Tests of Building Construction and Materials, A2.

*Sponsors:* National Fire Protection Association; American Society for Testing Materials; National Bureau of Standards.

National Plumbing Code, A40.8.

*Sponsors:* The American Public Health Association; The American Society of Mechanical Engineers.

Building Code Requirements for Minimum Design Loads in Buildings and Other Structures, A58.1 (Revision of A58.1-1945).

*Sponsor:* National Bureau of Standards.

#### Withdrawal of Standard Being

#### Considered —

Plumbing Code, A40.7-1949.

*Sponsors:* American Public Health Association; American Society for Testing Materials.

NOTES: Action on Proposed American Standard A40.8 (above) will make this edition out of date.

### Drawings and Symbols

#### In Standards Board —

Letter symbols for Aeronautical Sciences, Z10.7 (Revision of Z10.7-1950).

*Sponsor:* American Society of Mechanical Engineers.

#### Withdrawal Requested —

Graphical Symbols for Single (One) Line Electrical Engrg Diagrams, Y32.1.1-1951.

Graphical Symbols for Electric Power and Control, Z32.3-1946.

Graphical Symbols for Telephone, Telegraph and Radio Use, Z32.5-1944.

Graphical Symbols for Electron Devices, Z32.10-1948.

Basic Graphical Symbols for Electric Apparatus, Z32.12-1947.

*Sponsors:* American Institute of Electrical Engineers; American Society of Mechanical Engineers.

### Electrical

#### American Standards Published —

Testing Molded Materials Used for Electrical Insulation, ASTM D 48-52T; ASA C59.1-1954. \$0.25

Electrical Resistance of Insulating Materials, ASTM D257-52T; C59.3-1054. \$0.25

Testing Laminated Tubes Used for Electrical Insulation, ASTM D348-52; ASA C59.14-1954. \$0.25

#### American Standards Approved —

Definitions of Terms for Antennas and Waveguides, C16.21-1954.

*Sponsor:* Institute of Radio Engineers.

Dry Cells and Batteries, Specification for, C18.1-1954 (Revision of C18-1947).

*Sponsor:* National Bureau of Standards.

Circuit Breakers (including Application Guide), C37.13-1954.

Test Code for Low Voltage Air Circuit Breakers, C37.14-1954.

Rated Control Voltages and Their Ranges for Low Voltage Air Circuit Breakers, C37.15-1954.

Distribution, Power, and Regulating Transformers, and Reactors other than Current-Limiting Reactors, C57.12-1954 (Revision of C57.12-1949).

#### In Board of Review —

Electrical and Mechanical Characteristics of Apparatus Bushings, C37.4a, (Supplement to Alternating-Current Power Circuit Breakers, C37.4-1953);

and C57.12b, (Supplement to Distribution, Power and Regulating Transformers, and Reactors other than Current-Limiting Reactors, C57.12-1954).

Miniature Incandescent Lamps, C78.140 (Revision of C78.140-1953).

Nomenclature for Glass Bulbs, C79.1 (Revision of C79.1-1948).

Nomenclature for Molded Glass Flares C79.2 (Revision of C79.2-1948).

*Sponsor:* Electrical Standards Board.

#### In Standards Board —

Proposed Project on Terminology for Automatic Controls, C85.

## AMERICAN

Dry Cells and Batteries, C18 (Revision of C18-1947).

*Sponsor:* Electrical Standards Board.

#### Standard Submitted —

Standards of Circuits: Definitions of Terms in the Field of Linear Varying Parameter and Nonlinear Circuits.

*Submitted by:* Institute of Radio Engineers.

### Gas Burning Appliances

#### In Board of Review —

Addenda (Z21.1b) to American Standard Approval Requirements for Domestic Gas Ranges, Z21.1-1952.

Addenda (Z21.5a) to American Standard Approval Requirements for Domestic Gas Clothes Dryers, Z21.5-1953.

Revision of American Standard Listing Requirements for Gas Valves, Z21.15-1944, R1952.

Addenda (Z21.28a) to American Standard Approval Requirements for Portable Gas Baking and Roasting Ovens, Z21.28-1948.

Addenda (Z21.31a) to American Standard Approval Requirements for Gas Counter Appliances, Z21.31-1941, R1947.

Addenda (Z21.34a) to American Standard Approval Requirements for Gas-Fired Duct Furnaces, Z21.34-1942, R1950.

Addenda (Z21.6b) to American Standard Approval Requirements for Domestic Gas-Fired Incinerators, Z21.6-1949, R1952.

Addenda (Z21.10a) to American Standard Approval Requirements for Gas Water Heaters, Z21.10-1953.

Revision of American Standard Approval Requirements for Gas-Fired Room Heaters, Z21.11-1949.

Addenda (Z21.13.1a) to American Standard Approval Requirements for Central Heating Gas Appliances, Volume I, Steam and Hot Water Boilers, Z21.13.1-1951.

Addenda (Z21.13.2b) to American Standard Approval Requirements for Central Heating Gas Appliances, Volume II, Gravity and Forced Air Central Furnaces, Z21.13.2-1951.

Addenda (Z21.13.3a) to American Standard Approval Requirements for Central Heating Gas Appliances, Volume III, Gravity and Fan Type Floor Furnaces, Z21.13.3-1951.

Addenda (Z21.13.4a) to American Standard Approval Requirements for Central Heating Gas Appliances, Volume IV, Gravity and Fan Type Vented Recessed Heaters, Z21.13.4-1951.

*Sponsor:* American Gas Association.

### Mechanical

#### American Standard Published —

Method of Marking Portable Compressed Gas Containers to Identify the Material Contained, Z48.1-1954. \$0.15

*Sponsor:* Compressed Gas Association, Inc



**American Standards Approved —**

Machine Pins, B5.20-1954 (Revision of B5.20-1947).

Spindle Noses for Tool Room Lathes, Engine Lathes, Turret Lathes, and Automatic Lathes, B5.9-1954 (Revision of B5.9-1948).

Spindle Noses and Adjustable Adaptors for Multiple Spindle Drilling Heads, B5.11-1954 (Revision of Adjustable Adaptors for Multiple Spindle Drilling Heads, B5.11-1937).

*Sponsors:* American Society of Mechanical Engineers; Metal Cutting Tool Institute; National Machine Tool Builders Association; Society of Automotive Engineers.

Requirements for Five Quart and One Gallon Round Cans, B64.2-1954.

Requirements for Oblong Oil Cans, B64.3-1954.

Requirements for Grease Cans, B64.4-1954.

**In Board of Review —**

Circular and Dovetailed Forming Tool Blanks, B5.7 (Revision of Circular and Dovetail Forming Tool Blanks, B5.7-1948).

*Sponsors:* American Society of Mechanical Engineers; Metal Cutting Tool Institute; National Machine Tool Builders Association; Society of Automotive Engineers.

Socket Head Cap Screws and Socket Set Screws, B18.3 (Revision of B18.3-1947).

*Sponsors:* American Society of Mechanical Engineers; Society of Automotive Engineers.

Steel Detachable Link Chain and Attachments, B29.6.

*Sponsors:* American Society of Mechanical Engineers; Society of Automotive Engineers.

Malleable Iron Detachable Link Chain and Attachments, B29.7.

*Sponsors:* American Society for Testing Materials; Society of Automotive Engineers.

Refrigeration Flare Type Fittings, B70.1.  
*Sponsor:* Society of Automotive Engineers.

**Withdrawal Being Considered —**

Code for Design of Transmission Shafting, B17c-1927, R1949.

Woodruff Keys, Keyslots and Cutters, B17f-1930, R1947.

Shafting and Stock Keys, B17.1-1943.

*Sponsor:* American Society of Mechanical Engineers.

**Motion Pictures****American Standards Approved —**

Cross-Modulation Tests, 16-mm Variable-Area Photographic Sound, PH22, 52-1954 (Revision of Z22.52-1946).

Aperture for 35-mm Sound Motion Picture Projectors, PH22.58-1954 (Revision of Z22.58-1947).

Aperture for 35-mm Sound Motion Picture Cameras, PH22.59-1954 (Revision of Z22.59-1947).

Television Picture Area—35-mm Motion Picture Film, PH22.96-1954.

Television Picture Area—16-mm Motion Picture Film, PH22.96-1954

*Sponsor:* Society of Motion Picture and Television Engineers.

**Standard Withdrawn —**

Method of Determining Freedom from Travel Ghost in 16-mm Sound Motion Picture Projectors, Z22.54-1946.

*Sponsor:* Society of Motion Picture and Television Engineers.

**Office Equipment****American Standard Approved —**

Length of Cables for Office Dictation Machines, X2.5.19-1954.

*Sponsor:* National Office Management Association.

**In Board of Review —**

Specifications for Non-Carbonized, Single Ply, • Adding Machine Paper Rolls, X2.4.2.

Operating Voltage Range of Office Dictating Equipment, X2.5.16.

*Sponsor:* National Office Management Association.

**In Standards Board —**

Reflectances of Furniture for General Office Use, X2.1.3.

Definitions of Posture Chair, X2.1.4.

Maximum Electrical Leakage of Dictating Machines, X2.5.17.

Template and Method of Attaching Dictating Machine Secretarian Hand Controls to Typewriters, X2.5.18.

*Sponsor:* National Office Management Association.

**Photography****American Standards Approved —**

Method for Determining Spectral-Sensitivity, Indexes and Group Numbers for Photographic Emulsions, PH2.6-1954 (Revision of Z38.2.4-1946).

Photographic Grade Sodium Metaborate, Octahydrate, PH4.231-1954 (Revision of Z38.8.231-1948).

Photographic Grade Sodium Tetraborate, Pentahydrate, PH4.233-1954.

**Reaffirmation Approved —**

Dimensions for Radiographic Intensifying Screens, PH3.19-1954 (Reaffirmation of Z32.1.50-1948).

**In Standards Board —**

Dimensions for 7-mm Perforated Film for Cameras Other Than Motion Picture Cameras, PH1.20.

Photographic Grade Sodium Tetraborate, Decahydrate (Borax), PH4.230 (Revision of Z38.8.230-1948).

**Safety****Project Initiated —**

Fundamentals of Performance of Effluent Air and Gas Cleaning Equipment.

**In Standards Board —**

Quarry Safety Code, M28.1.

*Sponsor:* National Safety Council.

**Textiles****In Board of Review —**

Methods of Test for Wool Fabrics (Revision of L14.29-1951, L14.40-1953, L14.28-1953).

Specifications for Textile Testing Machines (Revision of L14.66-1951).

Definition of Terms in Relation to Textile Materials (Revision of L14.12-1953).

Methods of Testing Felt, ASTM D461-53; ASA L14.52 (Revision of ASTM D461-51; ASA L14.52-1953).

*Sponsors:* American Society for Testing Materials; American Association of Textile Chemists and Colorists.

**In Standards Board —**

Specifications and Methods of Test for Fineness of Wool Tops, ASTM D472-53T; ASA L14.29 (Revision of ASTM D472-50T; ASA L14.29-1951).

Methods of Test for Clean Wool Content of Wool in the Grease, ASTM D584-53T; ASA L14.40 (Revision of ASTM D584-52T; ASA L14.28-1953).

Methods of Testing and Tolerances for Certain Wool and Part Wool Fabrics, ASTM D462-53; ASA L14.28 (Revision of D462-53; ASA L14.28-1953).

Specifications for Textile Testing Machines, ASTM D76-53; ASA L14.66 (Revision of ASTM D76-49; ASA L14.66-1951).

**Withdrawal of Standard —**

Specifications and Methods of Test for Osnaburg Cement Sacks, ASTM D205-39; ASA L14.15-1949.

Specifications and Methods of Test for Woolen Yarns, ASTM D403-48T; ASA L14.21-1949.

Specifications and Methods of Test for Worsted Yarns, ASTM D404-48T; ASA L14.22-1949.

*Sponsors:* American Society for Testing Materials; Association of Textile Chemists and Colorists.

**E. W. GARDINOR**

Standardization lost a good friend in the death of E. W. Gardinor, Assistant to the Vice-President, Endicott Plant, International Business Machines Corporation. Mr Gardinor took an active interest in the work of the Company Member Conference, serving as the IBM representative from 1946 to 1952. He was a member of CMC's Administrative Committee from 1947 to 1950, and was chairman during 1950.

It was because of Mr Gardinor's personal interest that work was started on the subject of knurling, which finally resulted in approval of American Standard B5.30-1953.

## What's New on American Standard Projects

### Installation of Ceramic Tile, A108 —

A new project has been initiated under the procedure of the American Standards Association, its scope covering: "Methods for the installation of quarry tile for roof decks, ceramic mosaic on ceilings and floors, glazed ceramic tile on walls, tile on counter tops and glazed non-vitreous tile on floors."

The Tile Council of America has been invited to serve as sponsor for this project.

### Transformers, Regulators, and Reactors, C57 —

*Sponsor:* Electrical Standards Board

Work is progressing on consolidation of the American Standards for transformers into a series of publications, each one of which will include all requirements for a product line. Under the new system, for example, all material referring to Instrument Transformers will be included in one booklet; a similar procedure will be followed for each of the various apparatus sections of the C57 American Standards. This eliminates the need for cross references, as all pertinent material is being gathered from other C57 standards and included in each published standard.

The first of the consolidated standards was listed as approved in the "Status of Standards" list in the June issue. This standard, American Standard Requirements and Test Code for Instrument Transformers, C57.13-1954, combines material from two earlier documents—the American Standard Requirements for Instrument Transformers, C57.13-1953 and the American Standard Test Code for Instrument Transformers, C57.23-1948. Since the test code will be included in the new American Standard C57.13-1954, as soon as it can be published, the former American Standard C57.23-1948 has been withdrawn to affect this changeover. The new document consists entirely

of editorial revamping and consolidation of existing material and has been checked by the C57.13 Subcommittee on Instrument Transformers to make sure that no changes in substance were inadvertently included.

As noted above sponsor of this project is the Electrical Standards Board.

### Common Names for Pest Control Chemicals, K62 —

*Sponsor:* U.S. Department of Agriculture

Dr H. L. Haller, Assistant Director, Crops Research, Agricultural Research Service, U.S. Department of Agriculture, is chairman of this newly organized sectional committee. Secretary is J. A. Noone, National Agricultural Chemicals Association. Scope of the project is "To develop common names of pest control chemicals having potential use in pesticides including insecticides, fungicides, rodenticides, herbicides, nematocides, defoliant and plant growth regulators where such names appear desirable for popular designation of the chemicals." By "common name" is meant a non-proprietary name which applies to the 100 percent pure pest control chemical.

### All Textiles, L25 —

*Sponsor:* National Retail Dry Goods Association

Irwin D. Wolf, vice-president and general manager, Kaufmann Department Stores, Pittsburgh, has been named chairman of this new committee on all textiles. The committee will develop specifications and test methods for end-use performance requirements for all textile fabrics made from natural and synthetic fibers used in the manufacture of all wearing apparel and home furnishings.

Mr Wolf is chairman of the Executive Committee of the National Retail Dry Goods Association, and is also vice-president and director of the May Department Stores Company, St Louis.

Other officers of the sectional

committee are: Walter Ross, Rosewood Fabrics, Inc, vice-chairman; and Jackson E. Spears, Burlington Mills Corporation, vice-chairman. Mr Wolf represents the National Retail Dry Goods Association on the committee. Mr Ross and Mr Spears represent the Textile Distributors Institute.

Chairmen of subcommittees are: Sidney Rosenzweig, Mutual Buying Syndicate, chairman of the Subcommittee on Men's and Boys' Wearing Apparel and Accessories; Jay H. Rossback, Saks Fifth Avenue Department Store, chairman of the Subcommittee on Women's, Girls', Children and Infants' Wearing Apparel and Accessories; and M. A. Menchel, John Wanamaker Department Store, chairman on Home Furnishings.

### Preferred Practice for the Preparation of Graphs, Charts, and Other Technical Illustrations, Y15 —

*Sponsor:* American Society of Mechanical Engineers

Authors and publishers are given assistance in preparing illustrations for publication in a proposed standard just made available. Known as "A Guide for Preparing Technical Illustrations for Publications and Projection," this proposed standard makes available much useful information that is not otherwise obtainable. Before final approval, however, it is planned to give the proposed standard extensive editorial rearrangement and revision. The 34-page booklet gives samples of poor illustrations and shows how they should be redrafted in order to improve their legibility for publication. It analyzes the principles that control legibility of illustrations and indicates some of the common errors that interfere with legible reproduction. It also takes into consideration the preparation of slides for projection and makes suggestions for assuring their legibility.

The proposed standard was prepared by Subcommittee 1 of Sectional Committee Y15 on Graphics.

Copies can be purchased from the American Standards Association or from ASME at \$1.25 each.

## STANDARDS ENGINEERS SOCIETY ANNUAL MEETING

The first annual meeting of the Standards Engineers Society is being held at Atlantic City, N.J., October 1 and 2, with headquarters at Haddon Hall. All interested in standardization are invited.

Integration of government and industry standards is the subject of a symposium to be held Friday, October 1. R. V. Vittucci, Bureau of Ships, Department of the Navy, will present the government viewpoint. S. H. Watson, manager, Standardizing Division, Radio Corporation of America, will present industry's point of view. S. P. Kaidanovsky, Technical Director, Management and Technical Services, New York, and author of the Government Standards series of articles in this magazine, will be moderator.

Howard Coonley, Vice-President, Research Corporation, New York, will speak on international standardization and American industry at the luncheon meeting October 1.

Thomas H. Hallowell, Jr, President of the Standard Pressed Steel Company, Jenkintown, Pa., will be the principal speaker at the Awards Dinner, October 1. Individuals who have given outstanding service in standardization, will be honored by the Society at this meeting.

On Saturday morning October 2, Dr M. A. Williamson, Director of Research, Burroughs Corporation, Paoli, Pa., will speak on "How to Set Up and Operate a Materials Department."

Registration for the meeting starts at 9:30 a.m. Friday morning, October 1, at Haddon Hall, Atlantic City. Registration fee is \$15.00.

## Spindle Ends

(continued from page 292)

very similar and it is hoped that cooperation at this level will lead to compatible ISO Recommendations.

A standard arbor for circular saws is suggested as a proper project for this committee. So far we have nothing but data. One group prefers a drive with flats. A 13/16 square and a 13/16 diamond are well known examples. Others prefer a friction drive and use round arbors of various diameters. Conditions of use seem to have put blade diameters into three main groups: 7 to 7½, 8 to 8½, 9½ to 10 inches. The first group is designed to cut 2 in. dressed lumber at 45-degree bevel, the second group is designed for heavier work including 2-in. rough lumber at 45-degree bevel. Sizes smaller and larger than the 7- to 10-in. range have special uses and there are reasons to justify arbor sizes differing from the standard chosen for the popular middle range. Round arbors for this middle range include 5/8, 3/4, and 7/8. A compromise at 13/16 would accommodate the square and diamond blades mentioned above. A blade can be designed to fit the 13/16 diamond, the 13/16 square, and the 7/8 round arbors. Many of the machines in this range make use of a driving hub mounted on a splined shaft, thus giving the user a choice and easing the path to standardization.

The policy of the committee is to determine the trend, not to force compliance. We solicit the experience and opinions of those affected.

## Change Boiler Code Rule on Tube Thickness

At the request of the Chemical Industry Advisory Board, the ASME Boiler Code Committee has approved a resolution which now permits the use in heat exchangers and other code vessels of average-wall thickness sizes of tubes under the conditions stated. Previously only minimum wall thickness sizes

were permitted. The resolution reads:

"Tubes of approved materials, no matter how specified as to thickness, may be used in Code vessels provided the permissible under tolerance does not reduce the thickness below that required by the applicable Code for the pressure and temperature conditions of design."

This action is important to users of high-alloy and nonferrous alloy tubes in the construction of heat exchangers and other code vessels since a cost saving of 10 percent is said to be obtained through the use of average wall instead of minimum wall tubes.

**The Institute of Makers of Explosives** has just become a member of ASA's Mining Standards Board, with M. A. Nice, Hercules Powder Company, as its representative.

## Recent ASA Actions on International Questions

*Approved* Proposed ISO Recommendation No. 15, Identification Colors and Symbols for Pipes Conveying Fluids.

*Voted approval* of draft ISO Recommendation No. 22, Identification of Medical Gas Cylinders. Notified the American Hospital Association and the American Society of Anesthesiologists, as sponsors of Simplified Practice Recommendation R176-41 Color Marking for Anesthetic Gas Cylinders, of its action. Suggested that R176-41 be revised so as to conform to the ISO Recommendation No. 22.

*Voted no objection* to approval of Draft ISO Recommendation No. 30, Cylindrical Splines with Parallel Sides, Nominal Dimensions in mm. Referred comments by ASA committee B5, Small Tools and Machine Tool Elements, to ISO/TC 32, Splines and Serrations.

*Decided* to take an active part in the work of ISO/TC 41, Pulleys and Belts (Including V-Belts).



# 5 New Standards Just Published in the Series on

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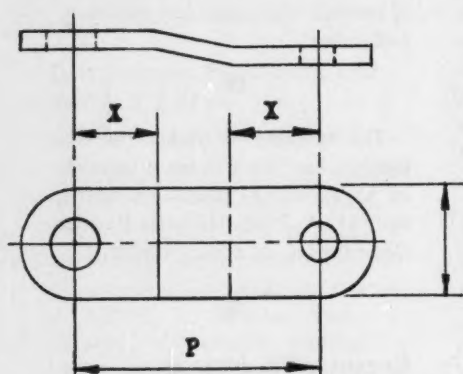


Figure 3 from American Standard B29.3  
showing an offset link plate

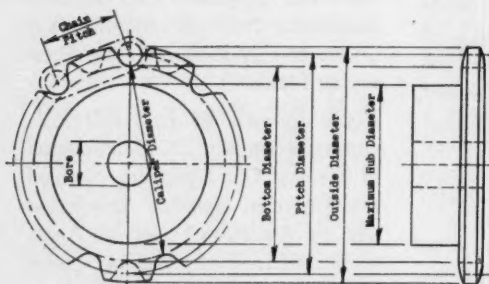


Figure 6-a from American Standard B29.4  
showing sprocket diameters, standard-roller  
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